SURVEY REPORT

AIR QUALITY SURVEY (TAGA 6000)
BAKELITE THERMOSETS LIMITED, BELLEVILLE
MAY - JUNE 1989

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Environment Ontario

Jim Bradley
Minister

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Report Prepared for:
The Southeastern Region
Ministry of the Environment

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OCTOBER 1989

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Executive Summary

During the period of May 23 to June 2, 1989, the mobile TAGA 6000 unit of the Air Resources Branch performed an air quality survey in Belleville, at the request of the Southeastern Region. The survey objective was to determine the level of phenol in the ambient air downwind of Bakelite Thermosets Limited.

Phenolic odours downwind of Bakelite Thermosets Limited were moderate to barely noticeable during the monitoring periods. A total of 18 half-hour average concentrations of phenol were determined: the ambient phenol concentrations were 4 to 57 $\mu g/m^3$. The Ministry Standard is 100 $\mu g/m^3$. The phenol concentrations during this survey were lower in comparison to those from a previous survey conducted in 1985 (Technical Memorandum ARB-171-85-AQM), where concentrations of 8 to 120 $\mu g/m^3$ were recorded. Furthermore, the phenolic odours were perceived to be less intense for this survey relative to the previous one. No other compounds, detectable by the TAGA system, could be traced to Bakelite Thermosets Limited.

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1.0 Introduction

At the request of the Southeastern Region, the mobile TAGA 6000 unit of the Air Resources Branch recently conducted an air monitoring survey in the vicinity of Bakelite Thermosets Limited (BTL), 621 Dundas Street East, Belleville, Ontario. BTL is a manufacturer of phenol-formaldehyde resins. The survey objective was to determine the identities and levels of atmospheric contaminants as a result of BTL plant operations. The initial target compounds for this survey were phenol and ammonia. An air monitoring survey of BTL was conducted by the mobile TAGA 3000 unit of the Air Resources Branch in June 1985, and the findings were reported in Technical Memorandum ARB-171-85-AQM. During this 1985 survey, one of the half-hour monitoring periods indicated phenol in excess of the Ministry Standard. Because of the limited specificity of the TAGA 3000, this result could not be validated. Thus the TAGA 6000, which provides more precise analytical information, was used for the 1989 survey.

The mobile TAGA 3000 unit, a single quadrupole mass spectrometer, has been used by the Air Resources Branch for air quality measurements for nearly a decade. The TAGA, or Trace Atmospheric Gas Analyzer, possesses the unique capability of real-time monitoring of a broad range of atmospheric contaminants at trace levels. The recently acquired mobile TAGA 6000 unit, a tandem quadrupole mass spectrometer with a well-developed compound spectrum library, provides greater specificity and reduced analysis time relative to the mobile TAGA 3000 unit.

BTL manufactures formaldehyde, hexa-methylenetetraamine, and a variety of phenol-formaldehyde resins and micronized resins. Primary raw materials are methanol, ammonia and nonyl phenol. A brief description of the plant process and the relevant production information are supplied in Appendix A.

Presented here is the analysis of air samples acquired downwind of BTL as determined in the field by the mobile TAGA 6000 unit during the survey period of May 23 to June 2, 1989.

2.0 The TAGA 6000 "Fingerprinting" Technique

The Trace Atmospheric Gas Analyzer (TAGA) model is a specialized tandem mass spectrometer (MS/MS) with a unique air sampling inlet system and ion source (see Figure 1). Ambient air is sampled directly at a high flow rate (100 l/min.) into the ion source, which operates at atmospheric pressure. Ionization of trace contaminants is achieved by chemical ionization (CI) initiated by a corona discharge. Selective ionization of chemical classes is achieved through the addition of an appropriate CI reagent to the flowing air sample. For example, atmospheric water vapour highlights ketones, aldehydes, alcohols and acids; oxygen highlights phenols, chlorophenols and acids; benzene highlights aromatic compounds and sulphurous species; and ammonia highlights amines, amides and some

ethers.

The ionization of pollutants yields a mixture of pseudo-molecular ions which are immediately subject to mass analysis up to 350 amu (atomic mass units). Mass "fingerprinting" is achieved in a matter of minutes. The chemical or pollutant fingerprint arises from the interpretation of all the mass spectra for a given monitoring period. Identifications made on the basis of this method are only tentative, as they are determined through the scientist's considerable interpretation. The identity of compounds present at concentrations greater than about 1 $\mu g/m^3$ can be confirmed by use of the second stage of mass analysis to obtain a "daughter ion" mass spectrum. In this technique, the pre-selected ions collide with an inert gas in the mass spectrometer and subsequently undergo collisionally activated dissociation (CAD). The pattern of fragmentation is characteristic of the compound which produced the pseudo-molecular ion. The daughter ion spectra produced in the field may be computer searched against a library of known daughter ion spectra in near real-time, allowing on-site confirmation of pollutant identifications. In addition, the ambient air may be screened for classes of pollutants using either a "neutral loss" scan or a "parent ion" scan. For example, it is possible to screen for chlorinated species by monitoring the neutral loss of 35 amu, the mass of chlorine. The presence of methyl ketones could be established by performing a parent ion scan for 43 amu, which is a daughter ion common to all methyl ketones.

Owing to this system's unique features of direct air sampling and atmospheric pressure chemical ionization, the technique is highly sensitive to many polar organic compounds in real-time. In general, the TAGA can detect volatile compounds which contain a hetroatom such as N, O, P, S, or halide. The real-time limits of detection for the TAGA range from 0.1 to 10 $\mu g/m^3$, depending on the type of chemical(s) and the complexity of the sample matrix.

The mobile TAGA 6000 unit is equipped with a meteorological station which monitors atmospheric temperature at the roof height and the wind speed and direction at a height of ten metres. Meteorological data is simultaneously recorded by the main frame computer along with any air quality measurements.

2.1 Quantitation of Target Compounds

Accurate quantitation of a target compound can be achieved by calibrating the response of the TAGA to known gas phase concentrations of the target compound. Fragment ions, produced through collisions with Argon molecules in Quad 2 (see Figure 1) are characteristic of the target compound monitored in the "multiple reaction monitoring" (MRM) mode. A typical monitoring period for obtaining quantitative data is thirty minutes; this conforms to the period specified for Ministry Standards and Guidelines for atmospheric pollutants. The instrument is calibrated at least twice a day: before and after the monitoring period. Calibrations are conducted more frequently in

instances where target compound concentrations exceed Ministry Standards and guidelines.

Prior to any downwind monitoring, a six point calibration was performed each day to determine the sensitivity of the TAGA 6000 towards gaseous phenol. Three parent-daughter ion pairs were chosen to verify the concentration of phenol in the air samples (see Appendix B, Section 6.2). The sensitivity of the TAGA 6000 toward phenol was determined by the slope of the calibration curve. The calibration was repeated three times to assess the reproducibility. Similarly, another set of calibrations was performed at the end of each monitoring day to ensure that the phenol response factors were within QA/QC criteria. On days when monitoring was restricted to one or two half-hour periods, the second calibration was not required.

2.2 Survey Strategy

The basic survey strategy was to position the TAGA 6000 downwind of the source and commence monitoring of the target compound(s), in this case, phenol. In addition to the downwind (source) monitoring, air monitoring was performed at locations upwind (background) of the suspected source. The upwind data was used to determine the detection limit of the target compound and to correct the downwind measurements for any background contributions.

The selection of monitoring sites was based upon several observations:

1) wind direction and wind speed;
2) plume tracking information;
3) odour characteristics;
4) type of chemicals detected (fingerprint); and
5) accessibility and road network.

3.0 Results and Discussion

The mobile TAGA 6000 unit conducted ambient air monitoring in Belleville during the period of May 23 to June 6, 1989. A total of 18 half-hour average concentrations of phenol were measured at 5 locations downwind of BTL (see Table 1). Monitoring was conducted mainly along Dundas Street East, north of BTL (see Map 1). One chemical fingerprint of the ambient air was made downwind of BTL on May 24, 1989 during the occurrence of odours. The only compound detected that could be related to BTL was phenol which was confirmed by the TAGA compound spectrum library (see Figure 2). Ammonia, the other target compound, was not present in significant levels relative to the background. The phenol half-hour average concentrations are summarized in Table 1, which includes information regarding the monitoring periods, the sampling locations, the meteorological conditions, and the daily detection limits for phenol. All data were

background (upwind) corrected. The complete set of the real-time phenol monitoring data as it was actually acquired in the field is provided in Appendix B. The meteorological data recorded by the mobile TAGA 6000 unit for each monitoring location is provided in Appendix C.

May 23

This day the sky was overcast, humidity was high, and the winds were 0-5 kmph from the south. Phenol calibrations and background levels were established at 675 Dundas St. E. (Site H). After completion of background measurements, the TAGA 6000 unit commenced plume tracking for phenol. The instantaneous phenol concentration (65 $\mu g/m^3$) peaked at Site A, the north side of Dundas St. E., 20 metres west of Haig Rd. Near the end of the half-hour period (S01), the phenol concentration decreased to non-detectable levels as the winds shifted due west. Odours also subsided along Dundas St. E.

May 24

May 24 was a humid, partially sunny day with winds initially from the SE at 3-10 kmph. Background levels and phenol calibrations were performed at the SE corner of Bradgate Rd. and Cooke Ct., upwind of BTL (Site I). Phenol plume tracking results indicated a phenol concentration profile similar to that observed on May 23. Again, the highest measurement (55 $\mu g/m^3$) was recorded at the NW corner of Dundas St. E. and Haig Rd. (Site A). Fifteen minutes into the half-hour monitoring period (S02), the winds shifted towards the SW and phenol levels approached the background levels (see Appendix B, Sample S02). The TAGA 6000 unit then moved to the east parking lot of Quinte Automatic Sprinkler Limited, 200 metres east of BTL on Dundas St. E. (Site B). A chemical fingerprint of the odours was acquired at Site B, followed by a half-hour measurement of phenol (S03). Three half-hour measurements of phenol (S04, S05, S06) were acquired at the NE corner of Dundas St. E. and Haig Rd. (Site C) in the presence of moderate phenolic odours. Finally, three more half-hour measurements of phenol (S07, S08, S09) were taken at the west parking lot of Quinte, 50 metres east of BTL (Site D). The phenol concentrations ranged from 4 to 28 $\mu g/m^3$ (see Table 1).

May 25

This was a sunny, warm day with winds from the SE at 2-8 kmph. Background phenol levels and phenol response factors were established at the north side of Dundas St. E., 500 metres east of BTL (Site H). After plume tracking, two half-hour measurements of phenol (S10, S11) were collected in front of BTL, on the south side of Dundas St. E. (Site E). Near the end of the second monitoring period, the wind speeds decreased to less than 2 kmph, and consequently air monitoring activities were halted.

May 26

Winds were out of the SE at speeds of up to 15 kmph. Four half-hour measurements of phenol (S12, S13, S14, S15) were made at Site E during moderate to strong phenolic odours. Half-hour averaged concentrations of phenol were the highest for the survey: 25 to 57 $\mu g/m^3$. Plume tracking was then done to determine the extent of phenol contamination in the residential community north of BTL. Phenol was detected in an area defined by Dundas St. E., Bradgate Rd., Haig Rd. and Victoria Ave. Figure 3 is an example of some plume tracking data. The real-time levels of phenol are shown as a function of location. The phenol concentration isopleths are readily seen when this plume tracking data is plotted on map of the area (see Map 2). Phenol calibrations and background levels were determined at the SW corner of Munro Ave. and Bridge St. E. (site K).

May 29

May 29 was a sunny and clear day with brisk SW winds up to 30 kmph. Background monitoring and phenol calibrations were performed at Bradgate Rd., 50 metres north of Dundas St. E. (Site L). A half-hour measurement of phenol (S16, 18 $\mu g/m^3$) was acquired at the north side of Dundas St. E., opposite Quinte Automatic Sprinkler Limited (Site F). The high wind speeds prevented plume tracking and any further air monitoring.

May 31

This was another overcast and humid day. Winds were light and mainly from the SW. Background monitoring and phenol calibrations were performed at the north side of Dundas St. E. opposite Quinte (Site F). One half-hour measurement of phenol (S17, 4 $\mu g/m^3$) was taken at the south side of Dundas St. E. in front of BTL (Site E). Afterward the wind speed decreased considerably and all monitoring was halted for the day.

June 2

Heavy rain fell until 10:00 hours on June 2. Winds were mainly from the W with gusts to 25 kmph. Background levels and phenol calibrations were established at the SE corner of Bradgate Rd. and Dundas St. E. (Site M). A half-hour measurement of phenol (S18) was acquired and the concentration was below the detection limit of 4 $\mu g/m^3$.

4.0 Summary and Conclusions

The mobile TAGA 6000 unit conducted an air monitoring survey in Belleville, Ontario on May 23 to June 2, 1989 at the request of the Ministry's Southeastern Region.

The main purpose of this survey was to determine the levels of contaminants in the ambient air downwind of Bakelite Thermosets Limited. The monitoring results indicated that phenol was the only compound detected (by the TAGA 6000) downwind of BTL.

In summation, the results of this survey indicate that the ambient phenol levels were significantly lower compared to the previous 1985 survey results (ARB-171-85-AQM). During the 1985 survey, odours were generally stronger and the phenol measurements were higher, 8 to 120 $\mu g/m^3$, for a half-hour monitoring period. In contrast, the corresponding phenol levels during this survey were only 4 to 57 $\mu g/m^3$. Also, the phenolic odours were perceived to be less intense and more intermittent. The ambient phenol levels for all monitoring periods were well below the Ministry Standard of 100 $\mu g/m^3$. However, the instantaneous levels of phenol were generally high enough to cause odours. Apparently, during this survey 2 of the 8 resin stills were out of service and the plant operated daily at only 70 to 75% capacity.

5.0 Acknowledgements

The authors wish to thank the following contributors to this survey:

Greg Koyanagi (Consultant)
Jennifer Townsend (Consultant)
Doug Graham (MOE)

Figure 1: Schematic of the TAGA 6000 System

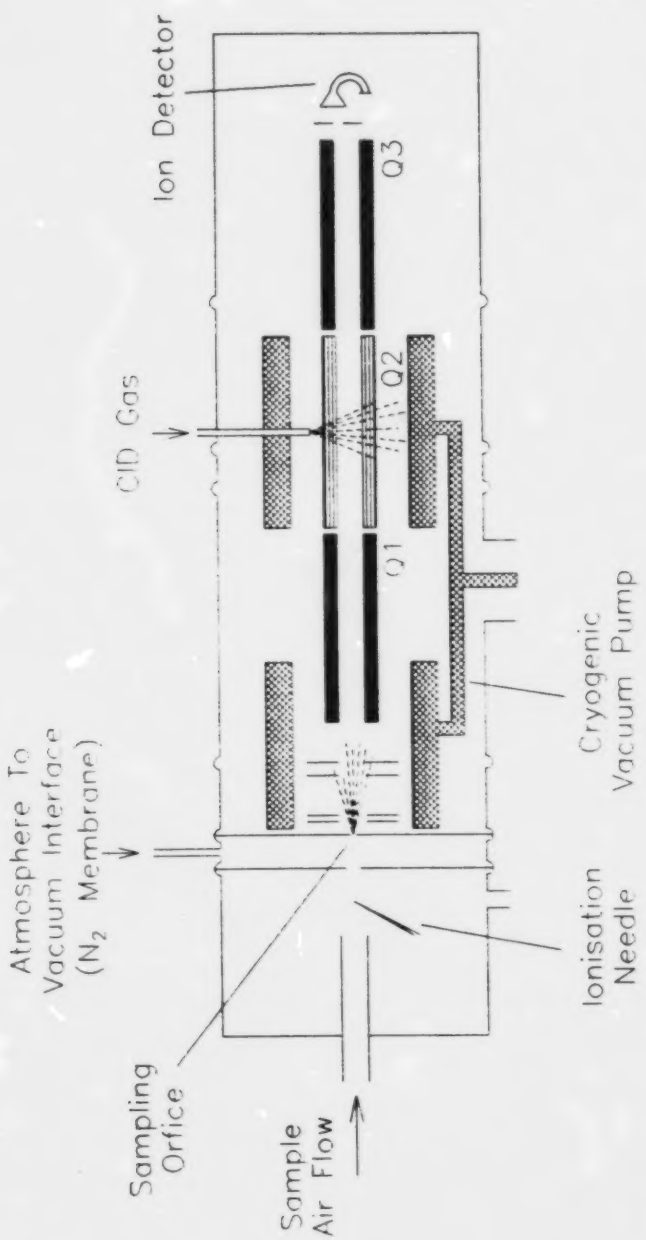
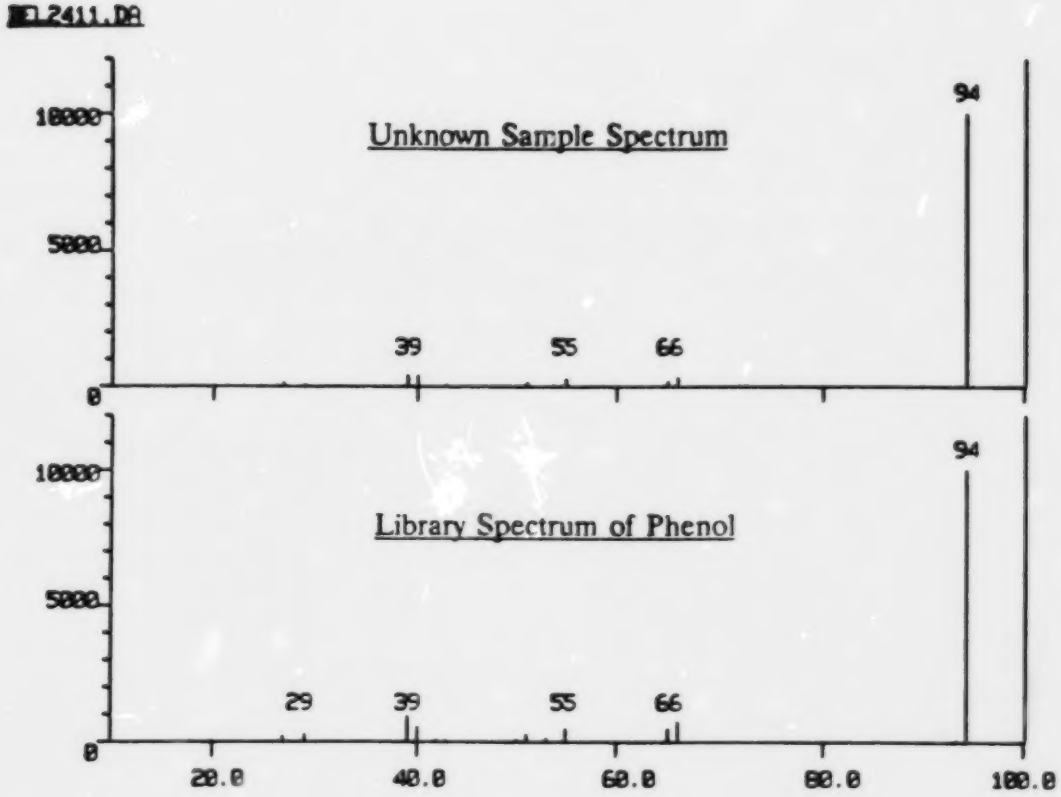


Figure 2: Library Search Daughter Ion Scan at Site A (benz. CI)

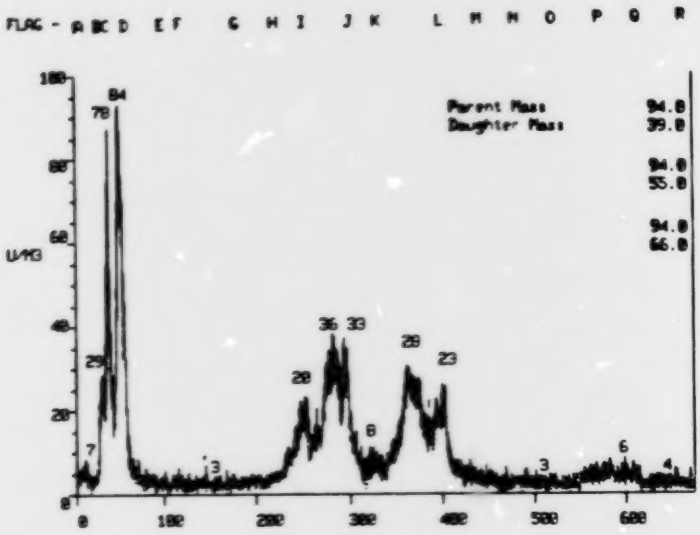


Library Search Results

Library File: BENZLIB Parent Ion : 94

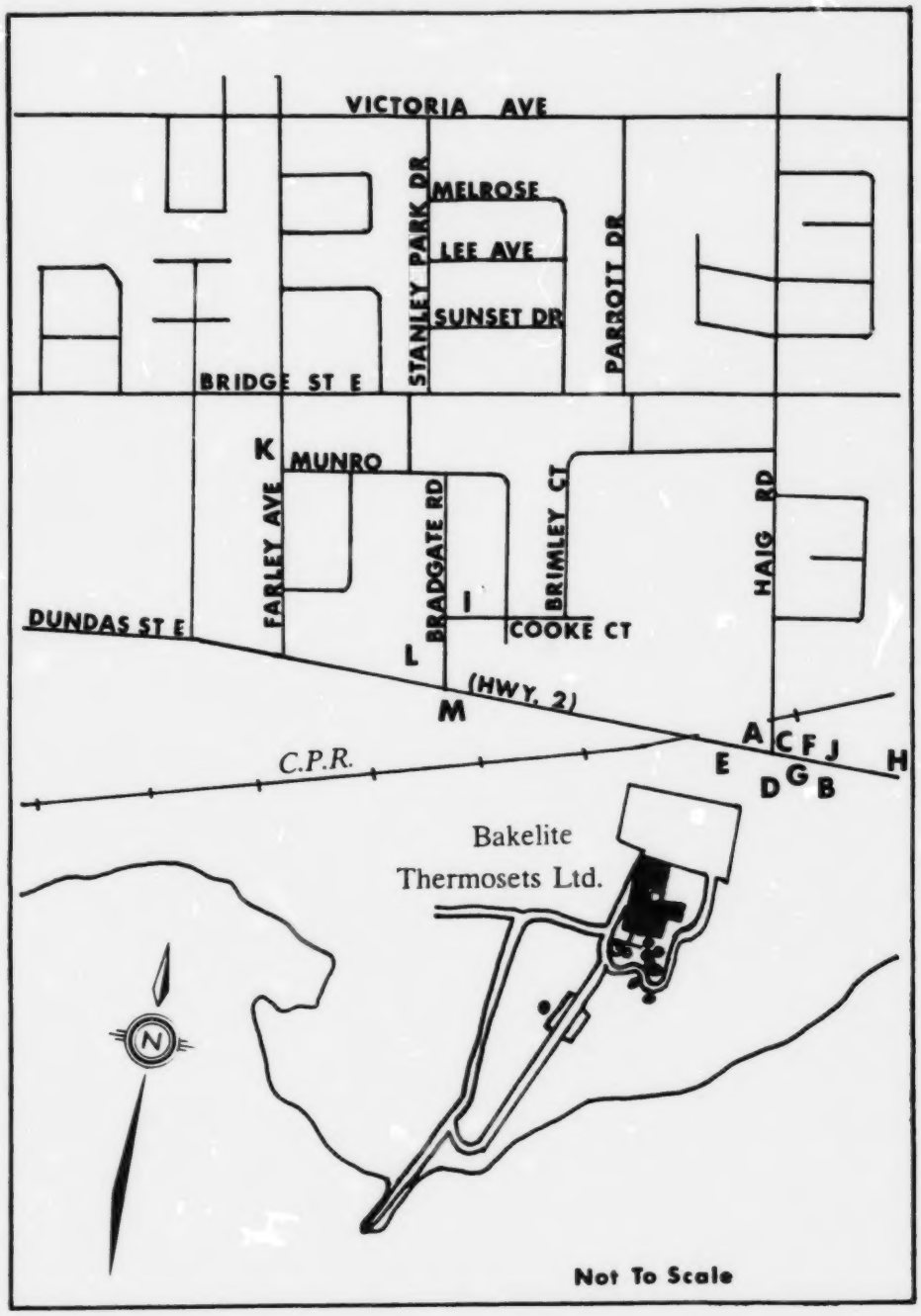
Name	Formula	Index	M.W.	Reverse	Forward
PHENOL	C6.H6.O	22	94	0.8914	0.9153

Figure 3: Plume Tracking of Phenol Downwind of BTL on May 26, 1989



Flag	Sequence #	Instantaneous Concen. (µg/m³)	Location
First	1	4	- N. of Dundas on Haig
A	4	5	- Corner of Dundas and Haig
B	34	21	- Dundas and the R.R. tracks
C	41	26	- 50m W. of R.R. tracks on Dundas
D	62	10	- Opposite Paris Marine on Dundas
E	102	3	- Corner of Dundas and Bradgate
F	131	ND	- Corner of Bradgate and Cooke
G	182	3	- Corner of Cooke and Brimley
H	223	5	- Brimley (bend in the road)
I	254	20	- corner of Brimley and Parrott
J	304	12	- Corner of Brumley and Haig
K	335	7	- Corner of Haig and Bridge
L	395	18	- Corner of Bridge and Parrott
M	422	6	- Corner of Bridge and Melrose
N	476	3	- Corner of Bridge and Stanley Park
O	509	ND	- Corner of Stanley Park and Sunset
P	559	3	- Corner of Sunset and Melrose
Q	608	5	- Melrose (bend in the road)
R	656	3	- Corner of Melrose and Stanley
Last	677	ND	- Corner of Stanley and Victoria

Map 1: Map of Monitoring Sites at Belleville, 1989



Map 2: Plume Tracking of Phenol Downwind of BTL on May 26,1989
(Isopleth Phenol Concentrations in $\mu g/m^3$)

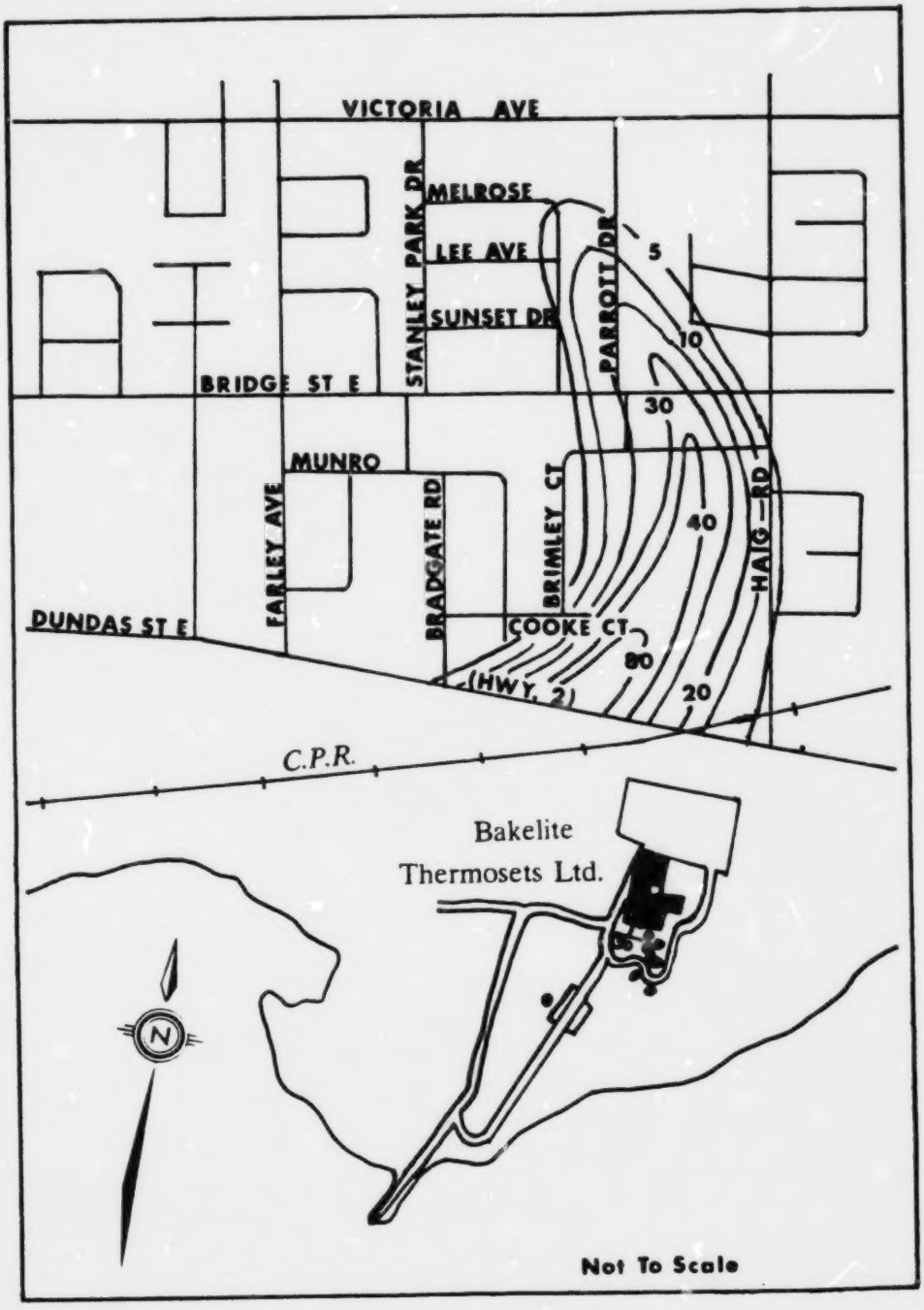


Table 1: Half Hour Average Concentrations of Phenol

- Determined in the Vicinity of BTL Industrial Resins Ltd.
Belleville, May 23 - June 2, 1989.

DATE (1989)	TIME	SITE	METEOROLOGY(1)				CONCENTRATION (ug/m^3)				
			AT	WS	WD	SAMPLE NO.	TWA(2)	SHR(3)	SD(5)	DET.LIM.	COMMENTS
May 23	18:46 - 19:16	A	18	2 - 5	SW	S01	7	68	± 15	1	Mild odour
May 24	12:03 - 12:33	A	25	3 - 10	SE	S02	4	29	± 17	1	Mild odour
May 24	14:20 - 14:50	B	24	10 - 13	SW	S03	6	40	± 17	1	Mild odour
May 24	15:26 - 15:56	C	23	18 - 20	SW	S04	23	120	± 17	1	Moderate odour
May 24	16:03 - 16:33	C	23	18 - 21	SW	S05	28	98	± 17	1	Moderate odour
May 24	16:33 - 17:03	C	23	18 - 20	SW	S06	19	73	± 17	1	Moderate odour
May 24	17:36 - 18:06	D	24	18 - 21	SW	S07	6	36	± 17	1	Mild odour
May 24	18:06 - 18:36	D	22	19 - 21	SW	S08	12	156	± 17	1	Mild odour
May 24	18:39 - 19:19	D	21	16 - 19	SW	S09	8	164	± 17	1	Mild odour
May 25	13:18 - 13:48	E	22	3 - 6	SE	S10	7	361	± 7	2	Mild odour
May 25	13:51 - 14:21	E	23	1 - 2	SW	S11	4	137	± 7	2	Mild odour
May 26	10:04 - 10:34	E	19	7 - 12	SE	S12	25	128	± 3	2	Moderate odour
May 26	10:35 - 11:05	E	20	9 - 11	S	S13	57	343	± 3	2	Strong odour
May 26	11:06 - 11:36	E	20	8 - 13	SE	S14	44	128	± 3	2	Moderate odour
May 26	11:36 - 12:06	E	20	8 - 12	SE	S15	32	124	± 3	2	Moderate odour
May 29	14:42 - 15:12	F	23	23 - 27	SW	S16	18	44	± 10	1	Mild odour
May 31	15:19 - 15:49	E	22	1 - 3	SW	S17	4	40	± 3	2	Faint odour
June 2	12:58 - 13:28	G	25	21 - 25	W	S18	ND	15	± 2	4	Faint odour

Note:
(1) AT - ambient temperature (°C), WS - sind speed (km/hr), WD - wind direction
(2) Time Weighted Average - half hour average (mean of 361 instantaneous readings)
(3) Single Highest Reading - single highest instantaneous reading during the TWA
(4) Ministry Standard (half hour average) for phenol = $100ug/m^3$
(5) SD - the standard deviations of the daily phenol calibration factors (n=6 with the exception of May 5, 29 and June 2 where n=3)

Table 2: Locations of Monitoring Sites at Belleville, 1989

DOWNWIND

SITE #	LOCATION
A	- Dundas St. E. and Haig Rd. (NW corner)
B	- 665 Dundas St. E. (Quinte Automatic Sprinkler System Ltd.) parking lot, 200m E. of BTL
C	- Dundas St. E. and Haig Rd. (NE corner)
D	- 665 Dundas St. E. (Quinte Automatic Sprinkler System Ltd.) parking lot, 50m E. of BTL
E	- Dundas St. E. (S. side), in front of BTL
F	- 665 Dundas St. E. (N. side), in front of Quinte Automatic Sprinkler Systems Ltd.
G	- 665 Dundas St. E. (S. side), 200m E. of BTL

UPWIND

SITE #	LOCATION
E	- Dundas St. E. (S. side), in front of BTL
H	- 675 Dundas St. E. (N. side), 500m E. of BTL
I	- Bradgate Rd. and Cooke Ct.
J	- Dundas St. E. (N. side), 300m E. of BTL
K	- Munro Ave., 50m S. of Bridge St. E.
L	- Bradgate Rd., 50m N. of Dundas St. E.
M	- Bradgate Rd. and Dundas St. E. (SE corner)

6.0 Appendices

6.1 Appendix A: Plant Process and Relevant Production Information

According to Mr. J. Hadden, plant engineer of BTL, 2 of the 8 resin stills were out of service. The plant was running at 70 to 75 % capacity each day during this survey. The process description was supplied by the Southeastern Region.

PROCESS DESCRIPTION

BTL produces a variety of phenolic resins. Phenol product is manufactured in the main building.

The description of the manufacturing processes used by BTL were summarized in a submission to the Canadian Chemical Producer's Association in response to the association's request for information as required by the Ministry program, Municipal-Industrial Strategy for Abatement (MISA). Also the submission provided schematics of manufacturing processes; production rates, used in manufacturing process, final products, intermediate products and by-products; and water intake, storm water discharge and sanitary discharge flow diagrams. This information is used herein to form the basis for description of the processes.

There are two manufacturing processes in use on the property.

- phenol/formaldehyde resins (stillroom unit)
- micronizer units

Phenol/Formaldehyde Resins (stillroom unit)

The manufacturing of the phenol resins takes place in a portion of the main building named the stillroom unit.

Phenol and formaldehyde are charged into stills (numbering eight in total) directly from weigh tanks and a catalyst, acid or base depending on the type of resin being produced, is added. The batch is heated using low pressure steam to initiate the reaction. The rate of reaction is controlled by using vacuum and cooling water systems, allowing the batchs to be heated to atmospheric reflux stage. When reaction is complete, the pH of the batch may be adjusted to specifications or additives may be charged in the still at various stages as per formulations. Two techniques are employed to reduce the possibility of discharge to atmosphere resulting from a runaway exothermic reaction. One technique uses a catalyst poison (formic acid) to neutralize the basic reaction catalyst (caustic) effectively stopping the exothermic reaction. The second control technique is the metered addition of formaldehyde to the reaction vessel allowing operating personnel to stop a runaway reaction by shutting oft the formaldehyde flow.

Two classes of phenolic resins are manufactured; resole or one-step resins and novolac or two step resins. Resole resins are heat reactive and are stored in cold storage rooms whereas novolac resins are thermoplastic and require addition of a crosslink agent. In the case of a resole resin the moles of formaldehyde are greater than the moles of phenol and a base is used as a catalyst whereas in the case of novolac resins the moles of formaldehyde are less than the moles of phenol and an acid is used as a catalyst. Both solid and liquid resins are manufactured; solid (lump) resins are collected in trays whereas liquid resins are drummed or transferred to storage tanks.

Emissions or discharges from the phenol resin manufacturing process are:

- cooling water from the still jackets and condenser discharged via the west ditch outfall.
- excess moisture from stills condensed as distillate and stored in tanks and thence incinerated (portion of phenol rich distillate may be recycled to stills).
- air emissions from venting of storage tanks, venting of weigh tank, atmospheric safety vents of the reactor stills, fugitive emission from the building, venting of the condensers, venting of the distillate tank and stack emissions from the incinerator.
- floor washwater, water washes, caustic washes and vacuum pump cooling water discharged to the caustic lagoon and thence to the City of Belleville sanitary sewerage system. Wastewater is conveyed from the main plant to the caustic lagoon via an open gravity flow ditch dug in overburden and fractured bedrock. Dimensions of the lagoon are 30 m by 30 m by 1.2 m depth. The lagoon is not aerated and treatment is by settling only.

Micronizer Units

Two micronizer units are used in the process, on built in 1950 and the other in 1978. Both are used to process the solid resins and are located in areas of the main building. The process schematic is illustrated in Figure 4 for both units.

In the case of the old unit, solid resins are fed along with auxilary materials into a coarse crusher. The coarse crushed material is then air vented to a cyclone and hammer mill. To reduce the possibility of a dust explosion in the hammer mill, it is blanketed with a steady stream of inert gas (nitrogen). The material is conveyed by air to micronizing rings for further reduction in size. This is accomplished by subjecting the material to compressed air (90 psi). The pulverized material is then blended with release agents and other additives in a blender. From the blender the material goes through a sifter and bagged. Size of the finished product is 99% passing a 200 micron mesh.

Emissions from the coarse crusher and the hammer mill are routed through a Sly dust collector rated at 400 CFM. Emissions from the micronizing rings and bag packer are routed through a Wheelabrator and Sly dust collectors rated at 1200 CFM and 600 CFM, respectively.

In the new circonizer unit, solid resins are fed into a course grinder with auxilary materials. The coarse ground material is fed into a mechanical grinding system which pulverizes the material. The pulverized material is then routed through a product dust collector rated at 2000 CFM and then to blenders (two) and a bag packer. The product dust collector is vented directly to atmosphere while the coarse grinder, blenders and bag packer are vented to a set of Environmental dust collectors (rating unknown).

Phenolic Distillate Liquid Waste Incinerator

The incinerator is natural gas fired to maintain 1600-1800 degrees F. Phenolic distillate liquid waste is fed through the bottom.

6.2 Appendix B: Real-time Phenol Monitoring Data

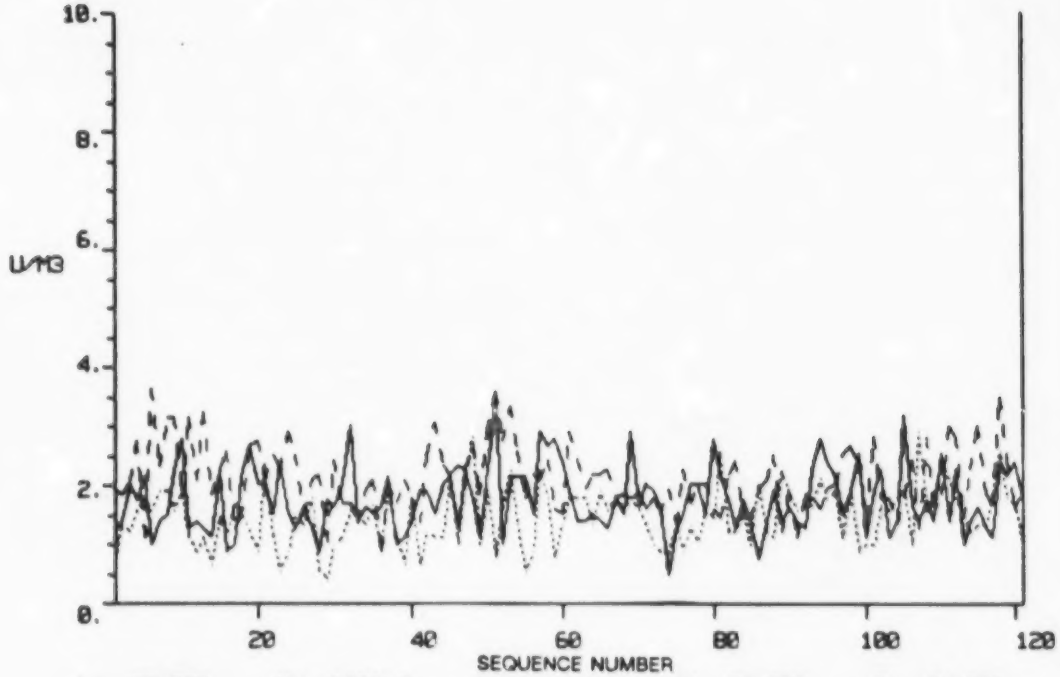
This appendix includes all real-time phenol measurements obtained during the Belleville (1989) survey. Both the background and downwind data are provided as recorded by the mobile TAGA 6000. Three parent-daughter ion pairs (i.e. 94/39, 94/55 and 94/66) were used to determine the phenol concentrations. Each figure represents 1 data file. Each figure shows the real-time data measured during that monitoring period (10 minutes for background measurement and 30 minutes for downwind measurement). The TAGA operating parameters are also listed below the concentration/time plots.

For the background, instantaneous measurements were recorded every 5 seconds during a period of 10 minutes, for a total of 121 measurements. The time-weighted average concentrations for each of the parent-daughter ion pairs (PM/DM) are presented along with their respective calibration coefficient (cal. coe.), standard deviation of the 121 measurements (σ) and detection limit (detlim).

For the downwind half-hour monitoring periods (designated by S##), measurements are recorded every 5 seconds for a total of 361 readings. The time-weighted average (TWA) values are background corrected for each parent/daughter ion pair: the calculations are given at the bottom of the page.

BEL2301.DA 10 MIN. BKGD. AVE. FOR PHENOL - SITE H (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	ANDY	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	102.	DM	0.22000	R3	32.500	Q2	3.5000	M0	0.00000
1R	135.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	78.500	C2	88.700	C3	123.00	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
23-MAY-89		A1	5235.0	DI	1.9200	CG	2.6200		
16:54:52		A2	1529.7						

10 MINUTE AVERAGE CONCENTRATIONS

UNITS OF U/M3

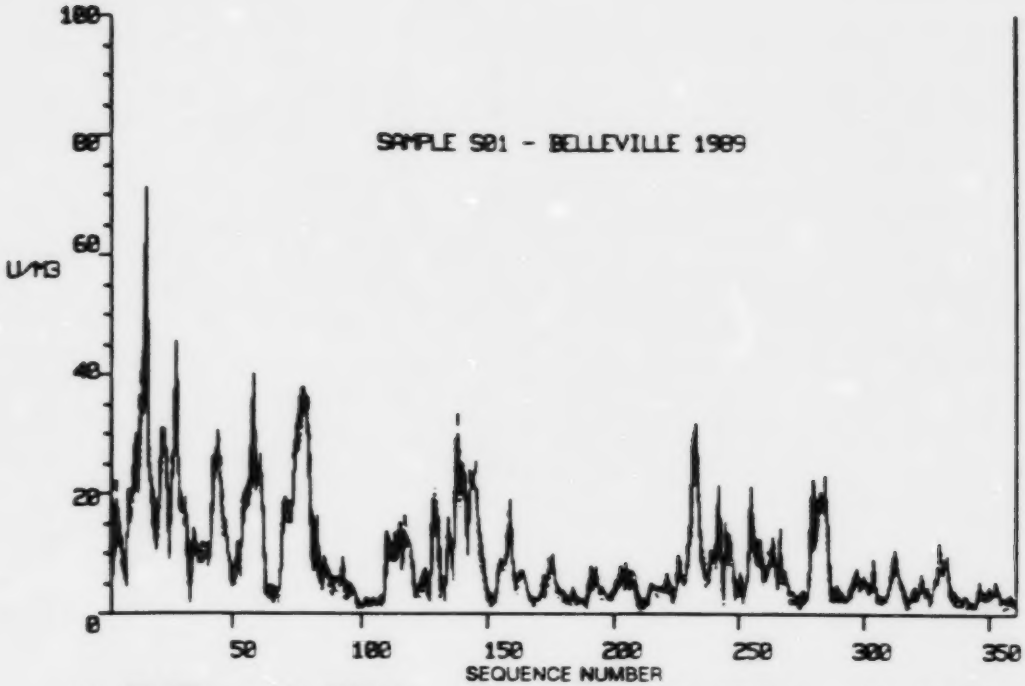
SS= 1 16:54:59
ES= 121 17:04:59

PM/DM	CAL.COE.	IONS/SEC	σ	CONC.	σ	DETLIM(3σ)
94/ 39	78.500	140.	44.0	1.781	0.560	1.680
94/ 55	88.700	131.	44.0	1.475	0.496	1.488
94/ 66	123.00	261.	78.7	2.125	0.575	1.724

BEL2388.DA HALF HOUR OF PHENOL AT SITE A (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA (UG/M3)	8	7	7

AVERAGE = 7
STAND. DEV. = ± 15%



L1 50.000	MU -3600.0	ST 10.	M1 39.000	F1 94.000
L2 34.000	IN 650.00	EN 250.	M2 55.000	F2 94.000
L3 0.00000	FP 50.000	MM 0.00000	M3 66.000	F3 94.000
L4 35.300	GR 0.00000		M4 0.00000	F4 0.00000
L5 0.00000	TH 1.	PE 5.0000	M5 0.00000	F5 0.00000
L6 0.00000	MT 0.	SC MRM	M6 0.00000	F6 0.00000
	OP JAT	CT 1.	M7 0.00000	F7 0.00000
	SY 300.	IS APCI	M8 0.00000	F8 0.00000
RE 102.	DM 0.22000	R3 32.500	Q2 3.5000	M0 0.00000
IR 135.	ID 0.14000	R1 32.000	R2 -14.000	
G1 0.00000	G2 50.000	G3 0.00000		
C1 78.500	C2 88.700	C3 123.00	C4 1.0000	
C5 0.00000	C6 0.00000	C7 0.00000	C8 0.00000	
23-MAY-89	A1 5219.7	DI 2.0000	C6 0.65500	
18:46:15	A2 1527.2			

HALF HOUR AVERAGE CONCENTRATIONS

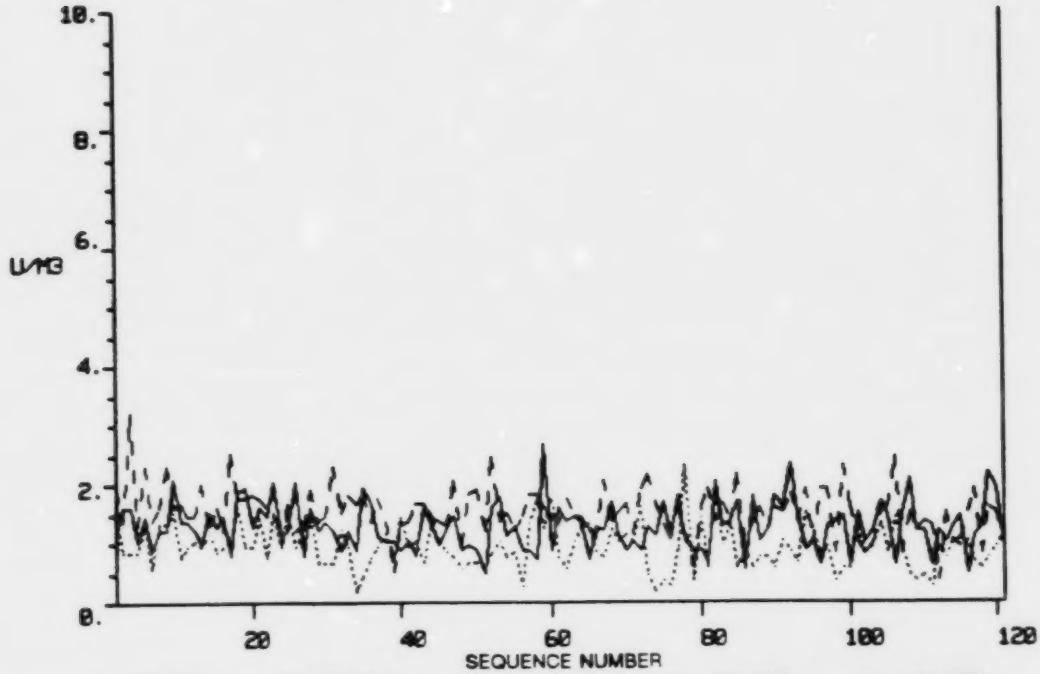
UNITS OF UG/M3

SS= 1 18:46:23
ES= 361 19:16:23

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	78.500	746.	9.498	1.781	7.691
94/ 55	88.700	774.	8.730	1.475	7.231
94/ 66	123.00	1179.	9.582	2.125	7.431

BEL2401.DA 10 MIN.BKGD. AVE. FOR PHENOL - SITE 1 (BENZ. CI)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	136.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	123.00	C2	104.00	C3	130.00	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
24-MAY-89		A1	4953.5	DI	2.0400	CG	30.785		
10:51:10		A2	1435.1						

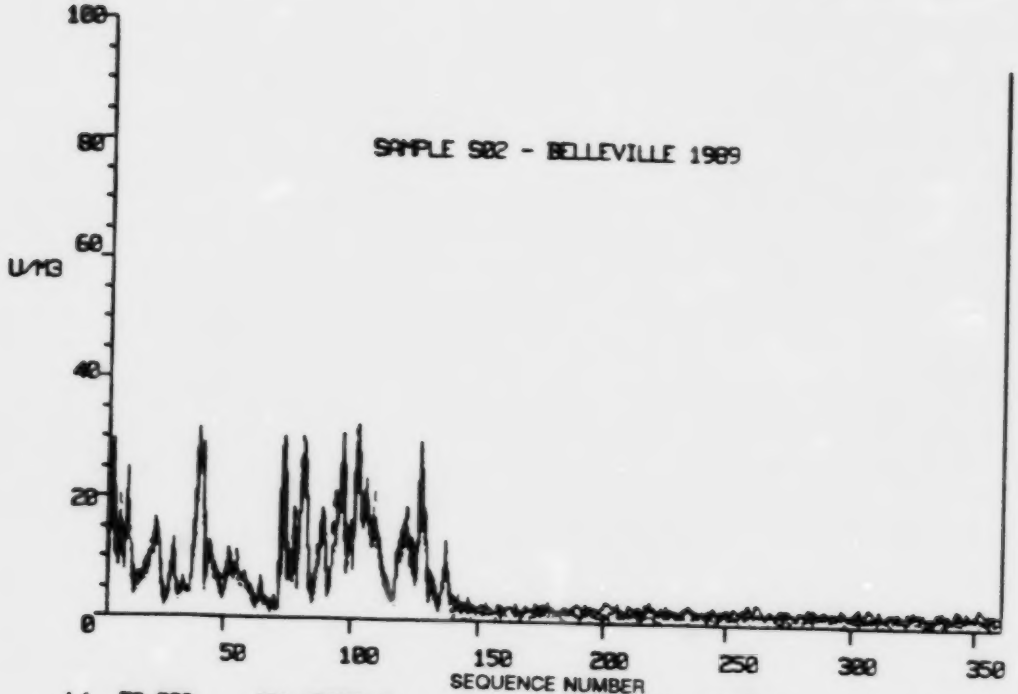
10 MINUTE AVERAGE CONCENTRATIONS
UNITS OF U/M3

SS= 1 10:51:17
ES= 121 11:01:17

PM/DM	CAL.COE.	IONS/SEC	σ	CONC.	σ	DETLIM(3σ)
94/ 39	123.00	159.	50.7	1.293	0.412	1.237
94/ 55	104.00	100.	40.2	0.961	0.387	1.160
94/ 66	130.00	200.	55.9	1.542	0.430	1.289

BEL2405.DA HALF HOUR OF PHENOL AT SITE A (BENZ. CL)

Parent Mass	94.0	94.0	94.0	
Daughter Mass	39.0	55.0	66.0	
TWA (UG/M3)	4	4	4	AVERAGE = 4 STAND. DEV. = ± 17%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	ANDY	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	136.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	123.00	C2	104.00	C3	130.00	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
24-MAY-89		A1	5041.1	DI	2.0000	CG	106.76		
12:03:12		A2	1497.2						

HALF HOUR AVERAGE CONCENTRATIONS

UNITS OF U/M3

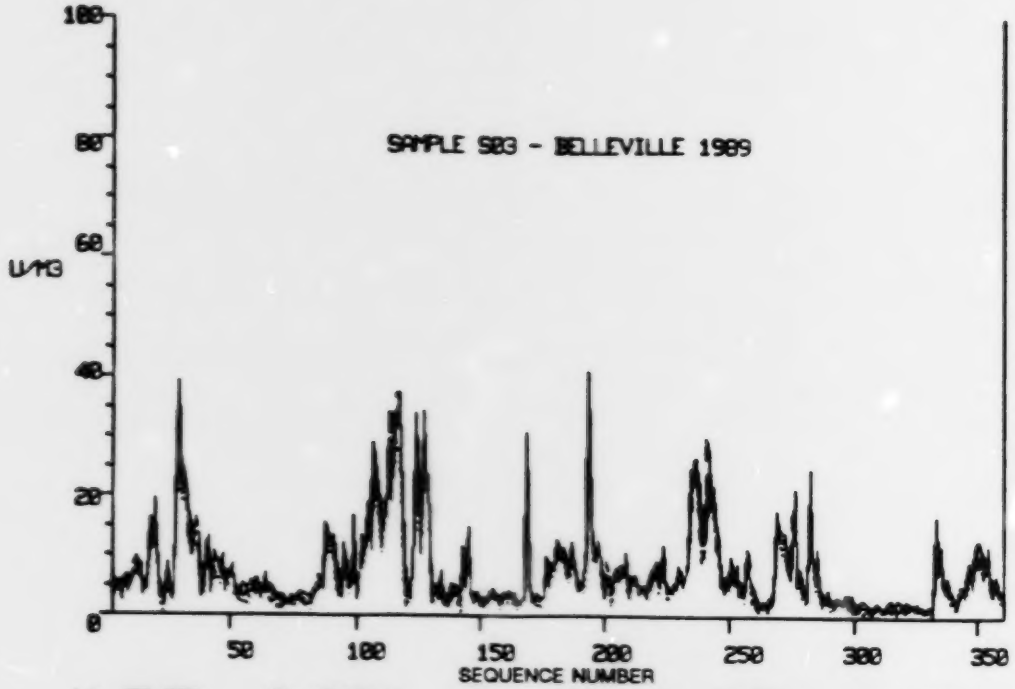
SS• 1 12:03:20
ES• 361 12:33:20

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	123.00	656.	5.396	1.293	4.878
94/ 55	104.00	476.	4.572	0.971	4.179
94/ 66	130.00	743.	5.715	1.542	4.679

BEL2409.DA HALF HOUR OF PHENOL AT SITE B (BENZ. CI)

Parent Mass:	94.0	94.0	94.0
Daughter Mass:	39.0	55.0	66.0
THA : (UG/M3)	7	6	6

AVERAGE = 6
STAND. DEV. = ± 17%



L1 50.000	MU -3600.0	ST 10.	M1 39.000	F1 94.000
L2 34.000	IN 650.00	EN 250.	M2 55.000	F2 94.000
L3 0.00000	FP 50.000	MM 0.00000	M3 66.000	F3 94.000
L4 35.300	GR 0.00000		M4 0.00000	F4 0.00000
L5 0.00000	TH 1.	PE 5.0000	M5 0.00000	F5 0.00000
L6 0.00000	MT 0.	SC MRM	M6 0.00000	F6 0.00000
	OP JAT	CT 1.	M7 0.00000	F7 0.00000
	SY 300.	IS APCI	M8 0.00000	F8 0.00000
RE 105.	DM 0.22000	R3 32.000	Q2 3.5000	M0 0.00000
1R 136.	1D 0.14000	R1 32.000	R2 -14.000	
G1 0.00000	G2 50.000	G3 0.00000		
C1 123.00	C2 104.00	C3 130.00	C4 1.0000	
C5 0.00000	C6 0.00000	C7 0.00000	C8 0.00000	
24-MAY-89	A1 5104.0	DI 1.9900	CG 167.02	
14:20:21	A2 1471.7			

HALF HOUR AVERAGE CONCENTRATIONS
UNITS OF UG/M3

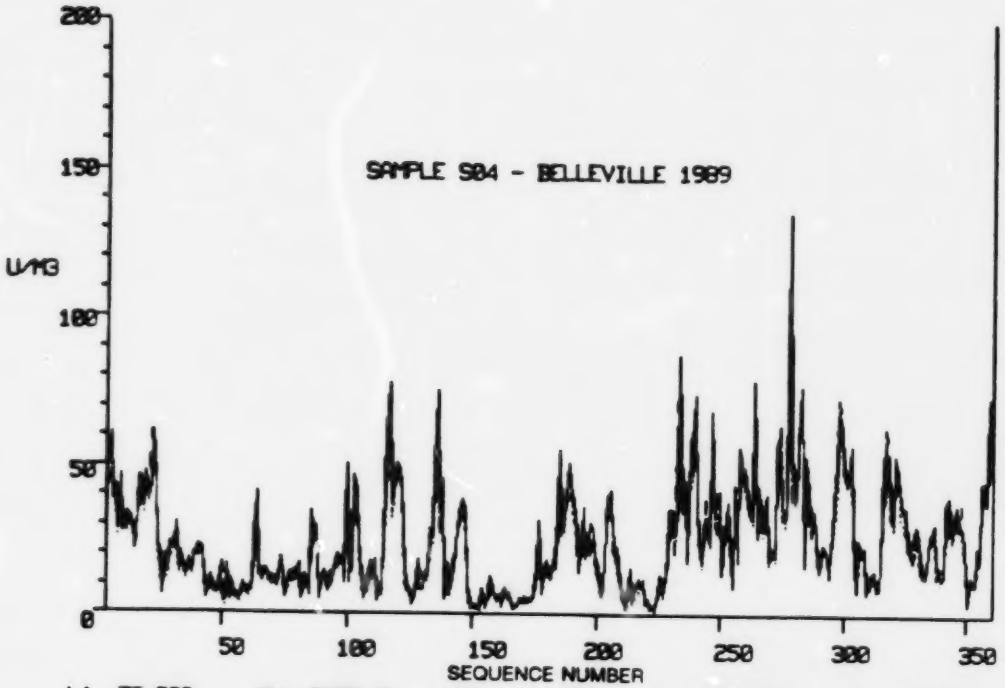
SS= 1 14:20:29
ES= 361 14:50:29

PH/DM	COL.COE.	IONS/SEC	THA CONC.	BKGD. CONC.	NET THA CONC.
94/ 39	123.00	982.	7.982	1.293	6.689
94/ 55	104.00	685.	6.591	0.961	5.630
94/ 66	130.00	1013.	7.793	1.542	6.251

BEL2410.DA HALF HOUR OF PHENOL AT SITE C (BENZ. CI)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	24	22	23

AVERAGE = 23
STAND. DEV. = ± 17%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	136.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	123.00	C2	104.00	C3	130.00	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
24-MAY-89		A1	5096.2	DI	2.0000	CG	220.00		
15:26:37		A2	1499.7						

HALF HOUR AVERAGE CONCENTRATIONS
UNITS OF UG/M3

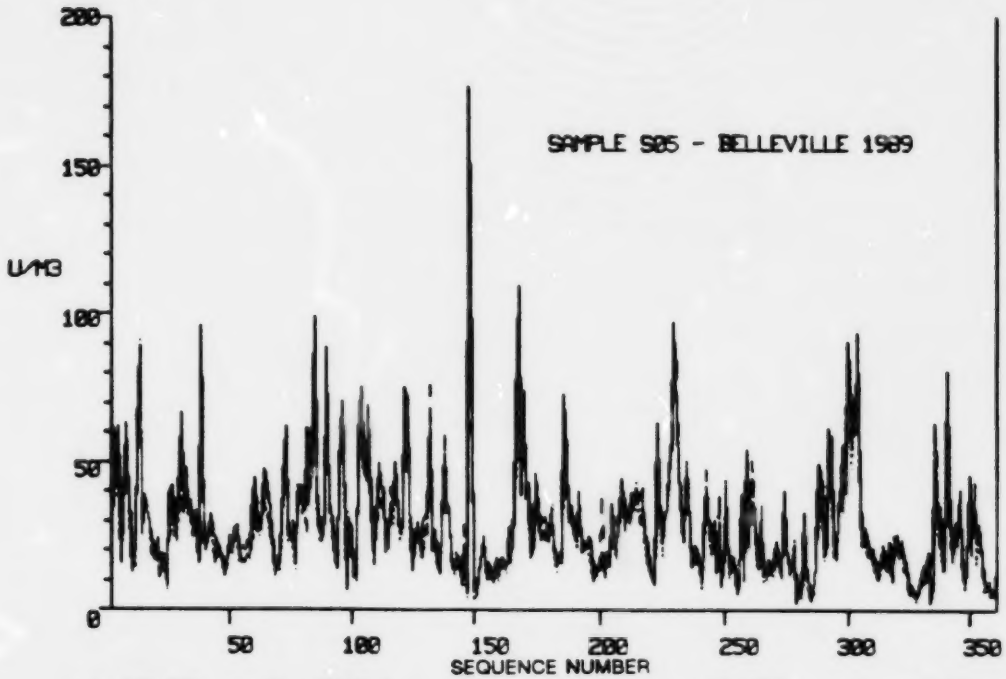
SS= 1 15:26:45
ES= 361 15:56:45

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	123.00	3127.	25.426	1.293	24.133
94/ 55	104.00	2379.	22.872	0.961	21.911
94/ 66	130.00	3152.	24.244	1.542	22.702

BEL2412.DA HALF HOUR OF PHENOL AT SITE C (BENZ. CI)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	29	27	27

AVERAGE = 28
STAND. DEV. = ± 17%



L1 50.000	MU -3600.0	ST 10.	M1 39.000	F1 94.000
L2 34.000	IN 650.00	EN 250.	M2 55.000	F2 94.000
L3 0.00000	FP 50.000	MM 0.00000	M3 66.000	F3 94.000
L4 35.300	GR 0.00000		M4 0.00000	F4 0.00000
L5 0.00000	TH 1.	PE 5.0000	M5 0.00000	F5 0.00000
L6 0.00000	MT 0.	SC MRM	M6 0.00000	F6 0.00000
	OP JAT	CT 1.	M7 0.00000	F7 0.00000
	SY 300.	IS APCI	M8 0.00000	F8 0.00000
RE 105.	DM 0.22000	R3 32.000	Q2 3.5000	M0 0.00000
1R 136.	1D 0.14000	R1 32.000	R2 -14.000	
G1 0.00000	G2 50.000	G3 0.00000		
C1 123.00	C2 104.00	C3 130.00	C4 1.0000	
C5 0.00000	C6 0.00000	C7 0.00000	C8 0.00000	
24-MAY-8.	A1 5017.4	DI 2.0000	CG 1.3100	
16:03:00	A2 1481.9			

HALF HOUR AVERAGE CONCENTRATIONS
UNITS OF U/M3

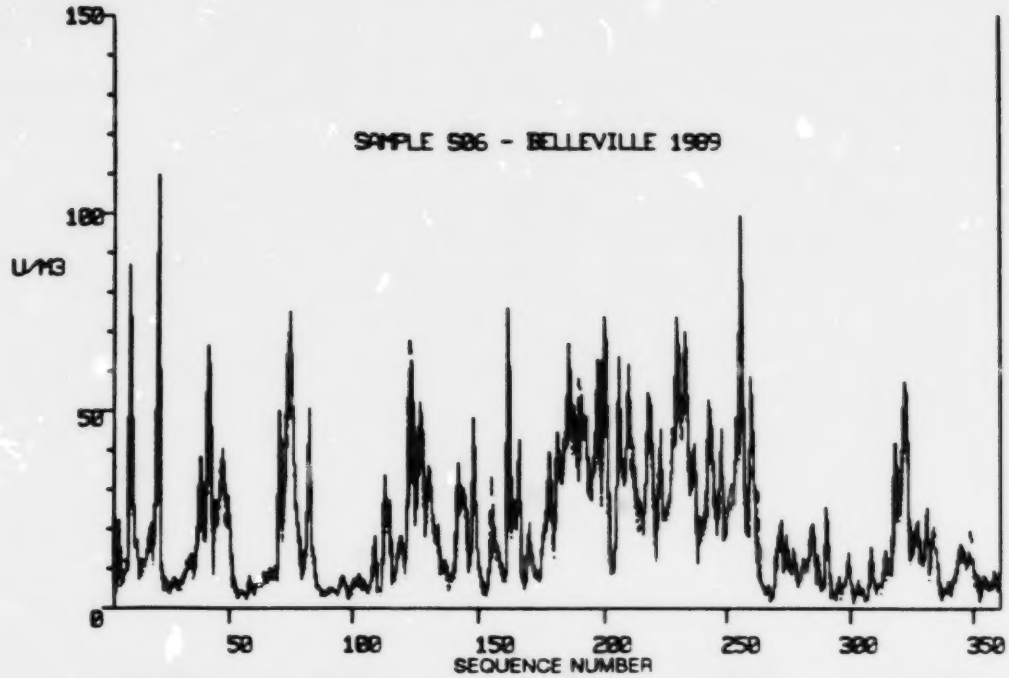
SS= 1 16:03:00
ES= 361 16:33:00

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	123.00	3754.	30.517	1.293	29.224
94/ 55	104.00	2855.	27.450	0.961	26.489
94/ 66	130.00	3688.	28.370	1.542	26.828

BEL2413.DA HALF HOUR OF PHENOL AT SITE C (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	20	18	18

AVERAGE = 19
STAND. DEV. = ± 17%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	136.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	123.00	C2	104.00	C3	130.00	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
24-MAY-89		A1	5856.9	DI	2.0400	CG	72.705		
16:33:26		A2	1504.7						

HALF HOUR AVERAGE CONCENTRATIONS

UNITS OF UG/M3

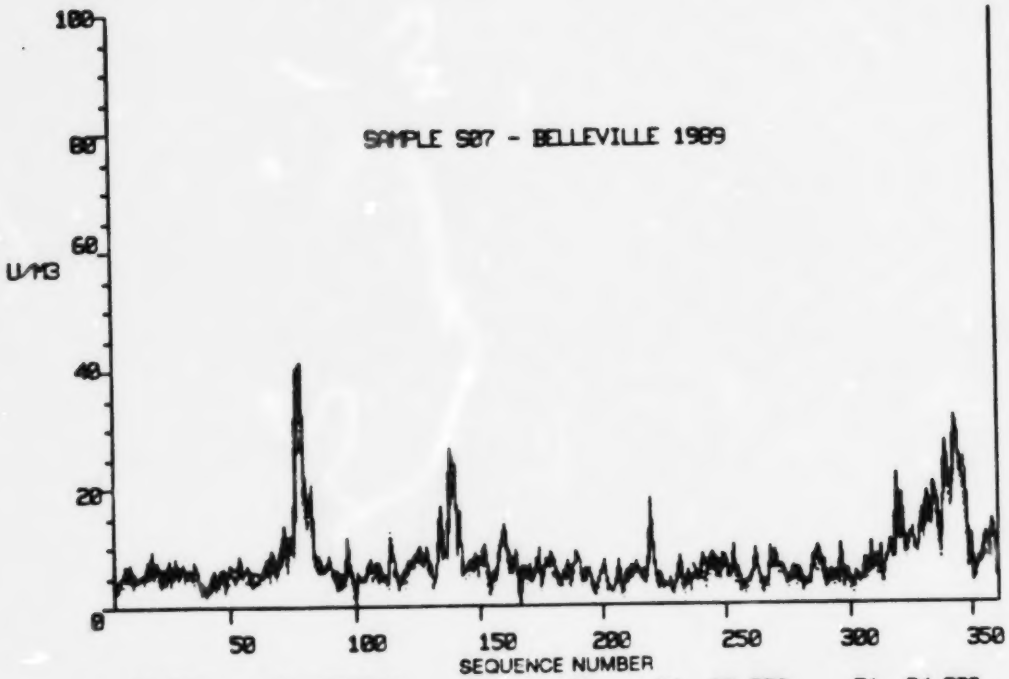
SS= 1 16:33:34
ES= 361 17:03:34

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	123.00	2570.	20.893	1.293	19.600
94/ 55	104.00	1980.	19.041	0.961	18.080
94/ 66	130.00	2574.	19.803	1.542	18.261

BEL2414.DA HALF HOUR OF PHENOL AT SITE D (BENZ. CI)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	7	6	6

AVERAGE = 6
STAND. DEV. = ± 17%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	136.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	123.00	C2	104.00	C3	130.00	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
24-MAY-89		A1	5033.2	DI	1.9500	CG	202.39		
17:35:59		A2	1487.0						

HALF HOUR AVERAGE CONCENTRATIONS

UNITS OF UG/M3

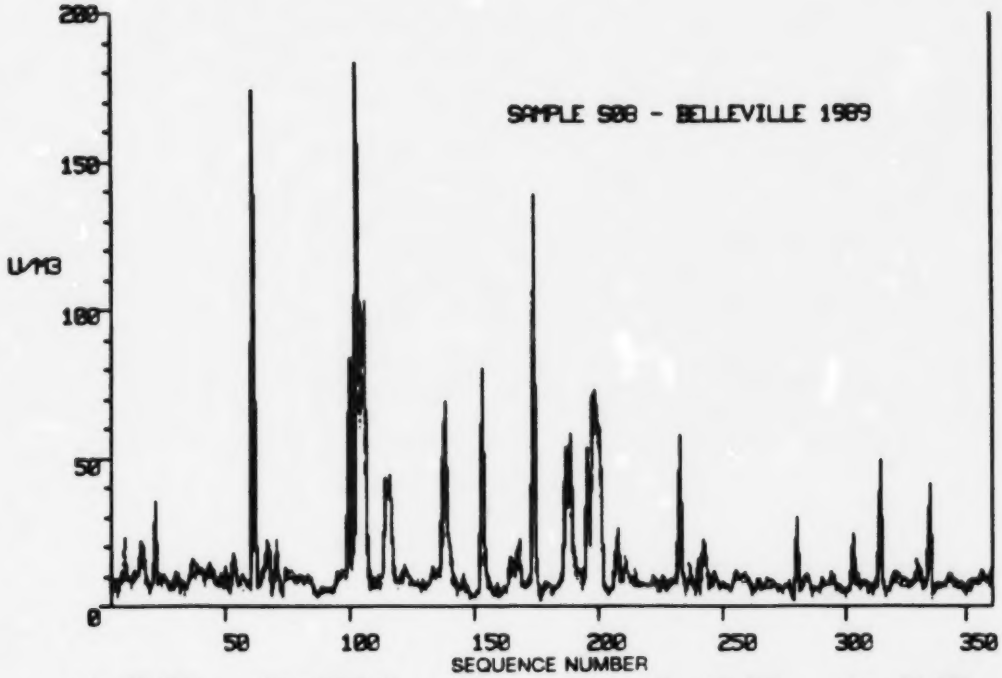
SS= 1 17:36:07
ES= 361 18:06:07

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	123.00	962.	7.820	1.293	6.527
94/ 55	104.00	708.	6.804	0.961	5.843
94/ 66	130.00	955.	7.348	1.542	5.806

BEL2415.DA HALF HOUR OF PHENOL AT SITE D (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	13	11	11

AVERAGE = 12
STAND. DEV. = ± 17%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	185.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	136.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	123.00	C2	104.00	C3	130.00	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
24-MAY-89		A1	5189.1	DI	2.0600	CG	75.900		
18:06:25		A2	1497.2						

HALF HOUR AVERAGE CONCENTRATIONS

UNITS OF U/M3

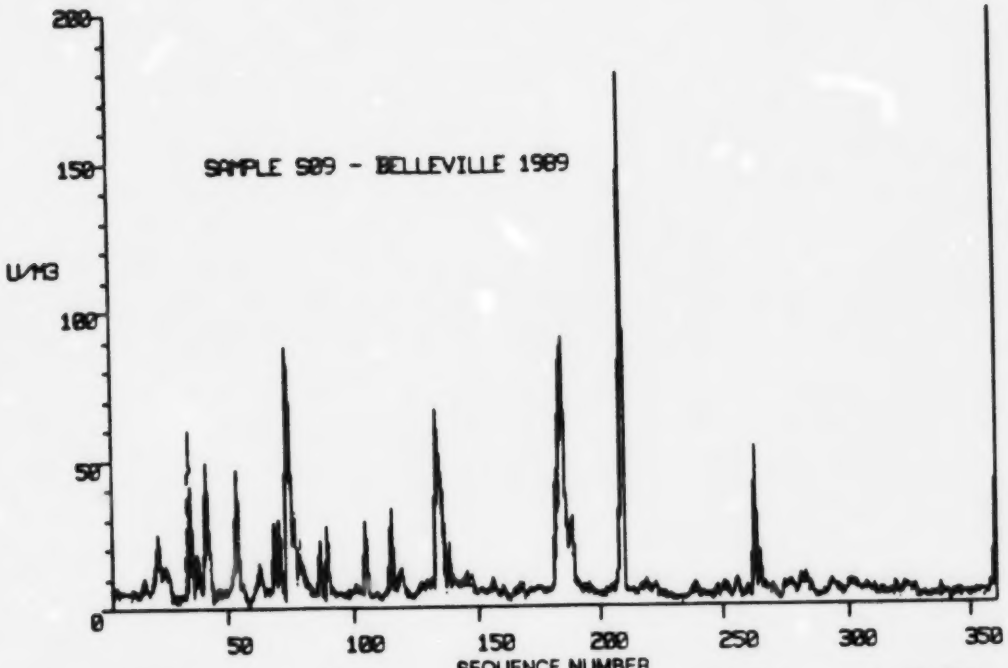
SS= 1 18:06:33
ES= 361 18:36:33

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	123.00	1742.	14.164	1.293	12.867
94/ 55	104.00	1280.	12.312	0.961	11.351
94/ 66	130.00	1637.	12.593	1.542	11.054

BEL2416.DA HALF HOUR OF PHENOL AT SITE D (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	9	8	7

AVERAGE = 8
STAND. DEV. = ± 17%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	185.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	136.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	123.00	C2	104.00	C3	130.00	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
24-MAY-89		A1	5111.8	DI	2.0100	CG	1.3100		
18:38:48		A2	1507.3						

HALF HOUR AVERAGE CONCENTRATIONS

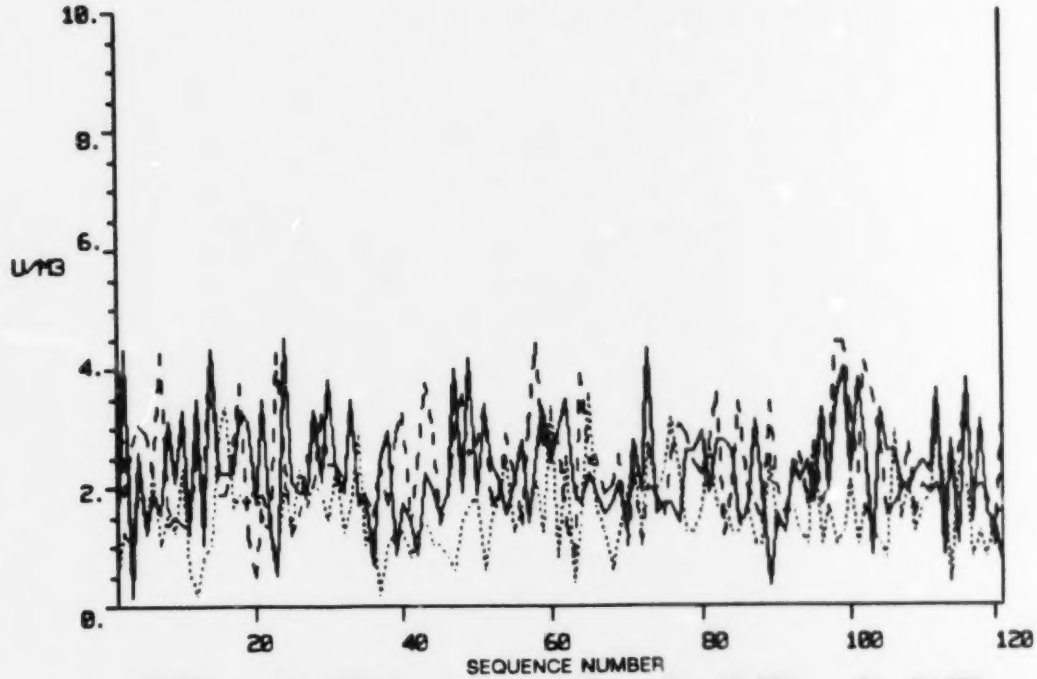
UNITS OF U/M3

SS= 1 18:38:56
ES= 361 19:08:56

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	123.00	1222.	9.935	1.293	8.642
94/ 55	104.00	888.	8.534	0.961	7.573
94/ 66	130.00	1154.	8.875	1.542	7.333

[redacted]1.DA 10 MIN. BKGD. AVE. FOR PHENOL - SITE J (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	135.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	57.300	C2	47.400	C3	58.400	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
25-MAY-89		A1	5235.0	DI	1.9600	CG	195.19		
12:24:55		A2	1609.0						

10 MINUTE AVERAGE CONCENTRATIONS

UNITS OF U/M3

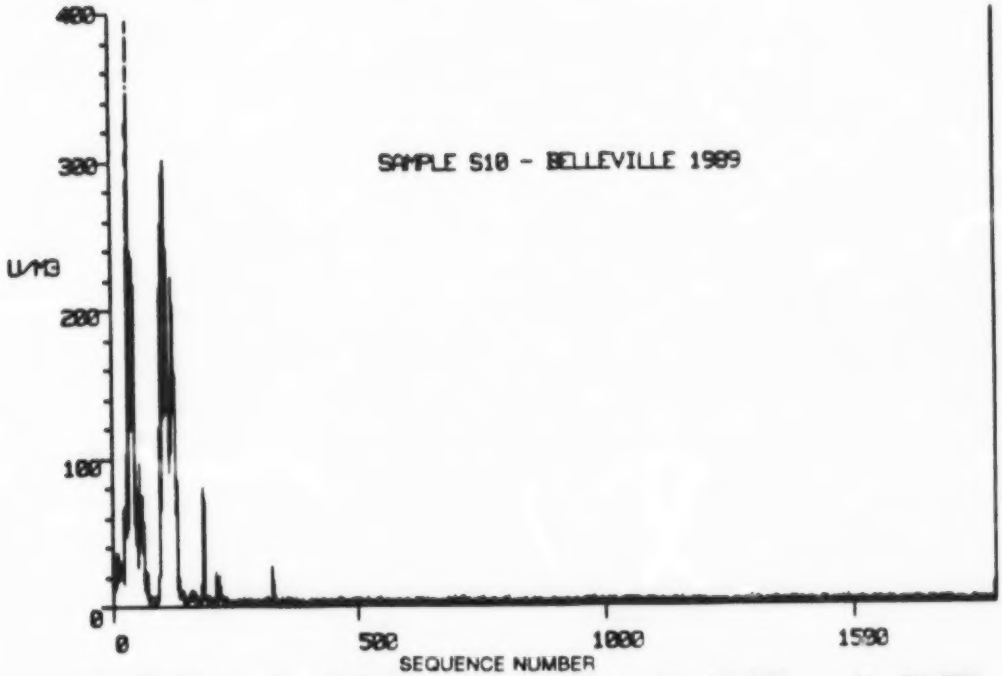
SS= 1 12:25:03
ES= 121 12:35:03

PM/DM	CAL.COE.	IONS/SEC	σ	CONC.	σ	DETLIM(3σ)
94/ 39	57.300	130.	53.8	2.275	0.938	2.815
94/ 55	47.400	76.	32.8	1.599	0.692	2.076
94/ 66	58.400	139.	51.5	2.385	0.882	2.645

BEL2585.DA HALF HOUR OF PHENOL AT SITE E (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	7	7	7

AVERAGE = 7
STAND. DEV. = ± 7%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000
L2	34.000	IN	650.00	EN	250.	M2	55.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000
L4	35.300	GR	0.00000			M4	0.00000
L5	0.00000	TH	1.	PE	1.0000	M5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000
		OP	JAT	CT	1.	M7	0.00000
		SY	300.	IS	APCI	M8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000
1R	135.	1D	0.14000	R1	32.000	R2	-14.000
G1	0.00000	G2	50.000	G3	0.00000		
C1	57.300	C2	47.400	C3	58.400	C4	1.0000
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000
25-MAY-89		A1	5856.9	DI	2.0200	CG	113.97
13:18:08		A2	1517				

F1	94.000						
F2	94.000						
F3	94.000						
F4	0.00000						
F5	0.00000						
F6	0.00000						
F7	0.00000						
F8	0.00000						
M0	0.00000						

HALF HOUR AVERAGE CONCENTRATIONS

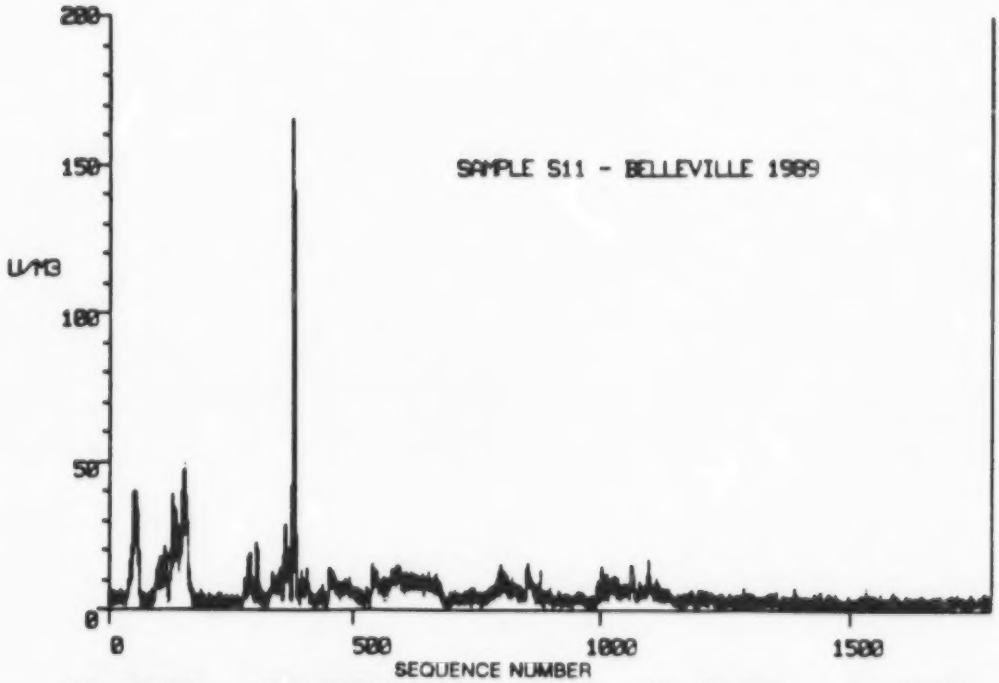
UNITS OF UG/M3

SS= 1 13:18:15
ES=1792 13:48:16

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BFGD. CONC.	NET TWA CONC.
94/ 39	57.300	545.	9.518	2.815	6.703
94/ 55	47.400	413.	8.706	1.599	7.107
94/ 66	58.400	556.	9.518	2.385	7.133

BEL2586.DA HALF HOUR OF PHENOL AT SITE E (BENZ. CI)

Parent Mass	94.0	94.0	94.0	
Daughter Mass	39.0	55.0	66.0	
TWA : (UG/M3)	4	4	4	AVERAGE = 4 STAND. DEV. = ± 7%



L1 50.000	MU -3600.0	ST 10.	M1 39.000	F1 94.000
L2 34.000	IN 650.00	EN 250.	M2 55.000	F2 94.000
L3 0.00000	FP 50.000	MM 0.00000	M3 66.000	F3 94.000
L4 35.300	GR 0.00000		M4 0.00000	F4 0.00000
L5 0.00000	TH 1.	PE 1.0000	M5 0.00000	F5 0.00000
L6 0.00000	MT 0.	SC MRM	M6 0.00000	F6 0.00000
	OP JAT	CT 1.	M7 0.00000	F7 0.00000
	SY 300.	IS APCI	M8 0.00000	F8 0.00000
RE 105.	DM 0.22000	R3 32.000	Q2 3.5000	M0 0.00000
1R 135.	1D 0.14000	R1 32.000	R2 -14.000	
G1 0.00000	G2 50.000	G3 0.00000		
C1 57.300	C2 47.400	C3 58.400	C4 1.0000	
C5 0.00000	C6 0.00000	C7 0.00000	C8 0.00000	
25-MAY-89	A1 5809.4	DI 2.0600	CG 26.855	
13:51:11	A2 1469			

HALF HOUR AVERAGE CONCENTRATIONS

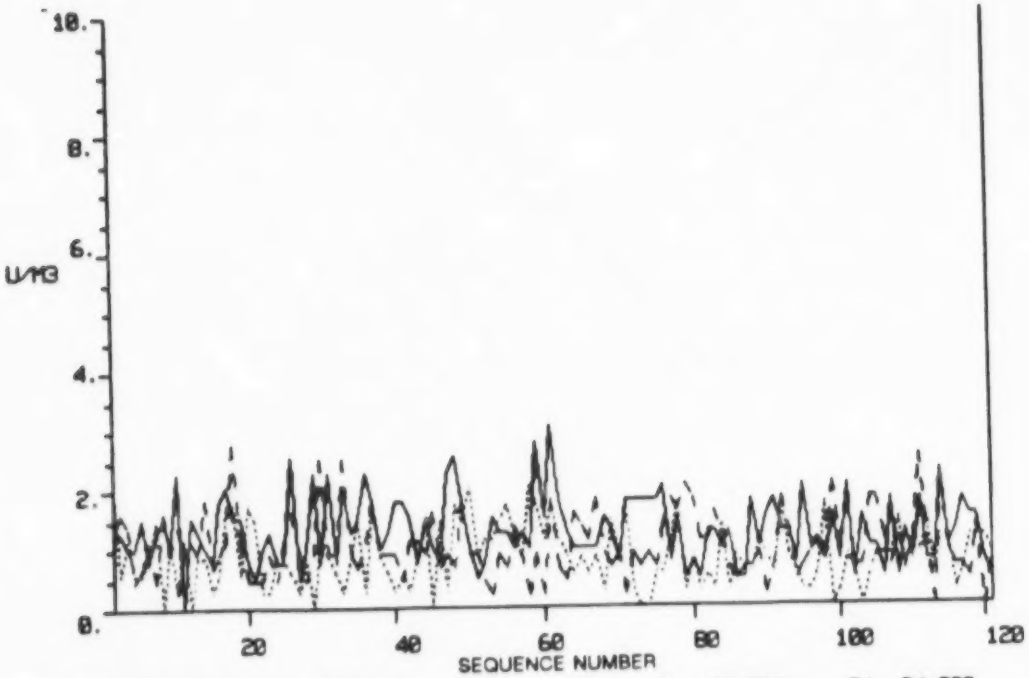
UNITS OF U/M3

SS= 1 13:51:19
ES=1792 14:21:19

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	57.300	355.	6.200	2.275	3.925
94/ 55	47.400	259.	5.467	1.599	3.868
94/ 66	58.400	365.	6.249	2.385	3.864

BE12507.DA 10 MIN. BKGD. AVE. FOR PHENOL - SITE K (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	GKK	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	134.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	39.100	C2	34.200	C3	43.500	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
26-MAY-89		A1	5196.8	DI	1.0900	CG	148.68		
13:21:51		A2	1509.8						

10 MINUTE AVERAGE CONCENTRATIONS

UNITS OF U/M3

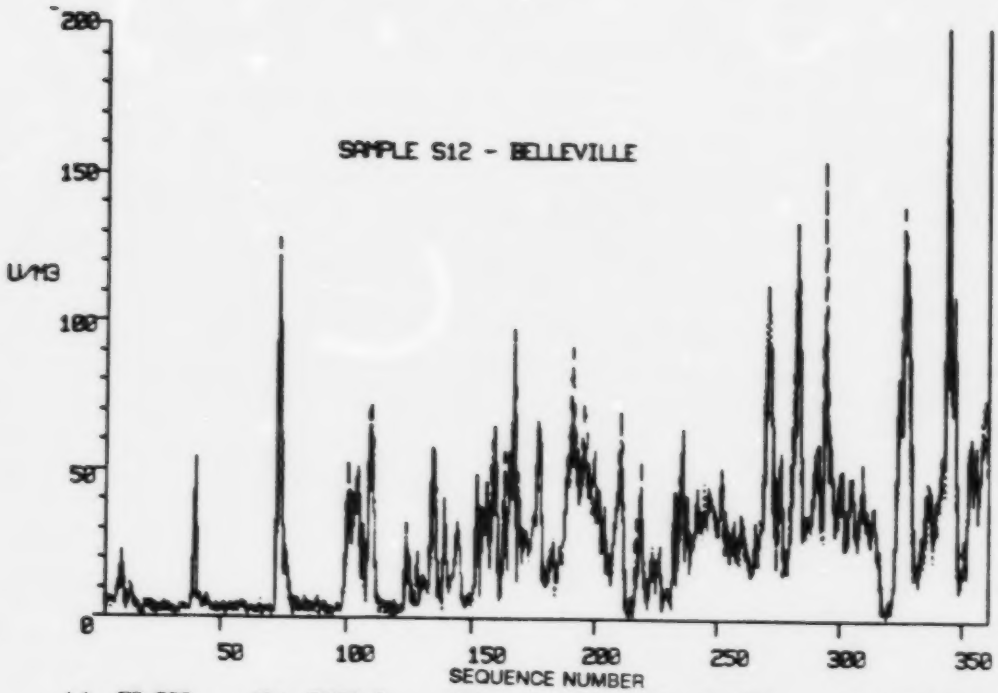
SS= 1 13:21:58
ES= 121 13:31:58

PM/DM	CAL.COE.	IONS/SEC	σ	CONC.	σ	DETLIM(3σ)
94/ 39	39.100	51.	22.0	1.302	0.563	1.689
94/ 55	34.200	30.	18.0	0.876	0.528	1.583
94/ 66	43.500	46.	23.7	1.057	0.545	1.635

BEL2601.DA HALF HOUR OF PHENOL AT SITE E (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	24	25	26

AVERAGE = 25
STAND. DEV. = ± 3%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	185.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	134.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	39.100	C2	34.200	C3	43.500	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
26-MAY-89		A1	5173.7	DI	1.9200	CG	235.00		
10:04:10		A2	1494.6						

HALF HOUR AVERAGE CONCENTRATIONS

UNITS OF U/M3

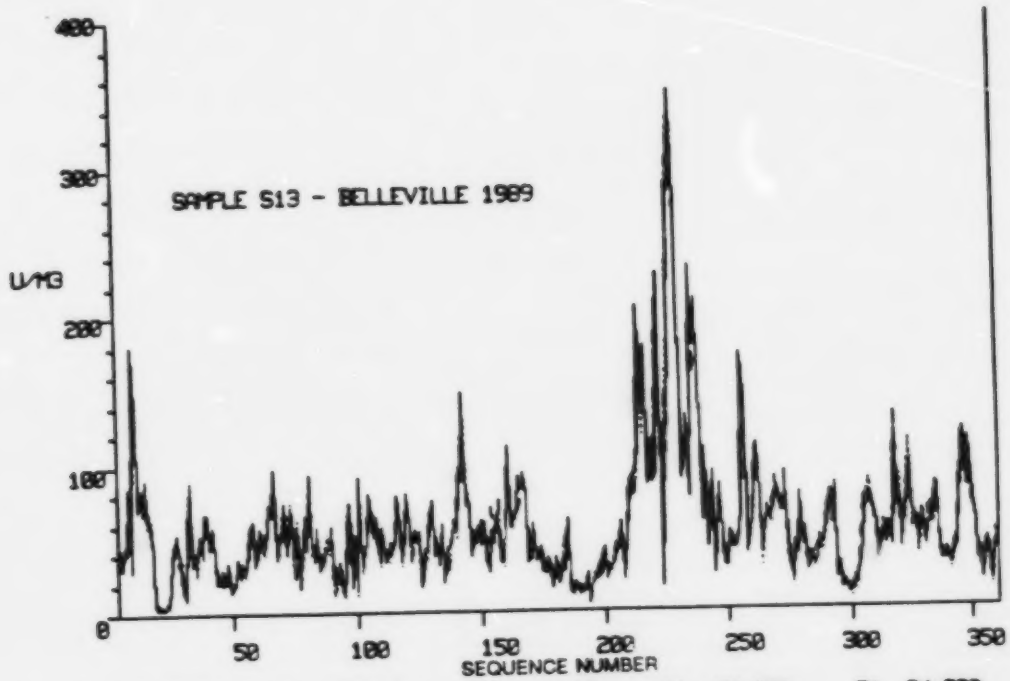
SS= 1 10:04:10
ES= 361 10:34:10

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	39.100	1013.	25.698	1.300	24.398
94/ 55	34.200	877.	25.638	0.876	24.762
94/ 66	43.500	1171.	26.927	1.157	25.770

BEL2602.DA HALF HOUR OF PHENOL AT SITE E (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	57	56	57

AVERAGE = 57
STAND. DEV. = ± 3%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	134.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	39.100	C2	34.200	C3	43.500	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
26-MAY-89		A1	5250.2	DI	1.9900	CG	237.76		
10:35:54		A2	1537						

HALF HOUR AVERAGE CONCENTRATIONS

UNITS OF U/M3

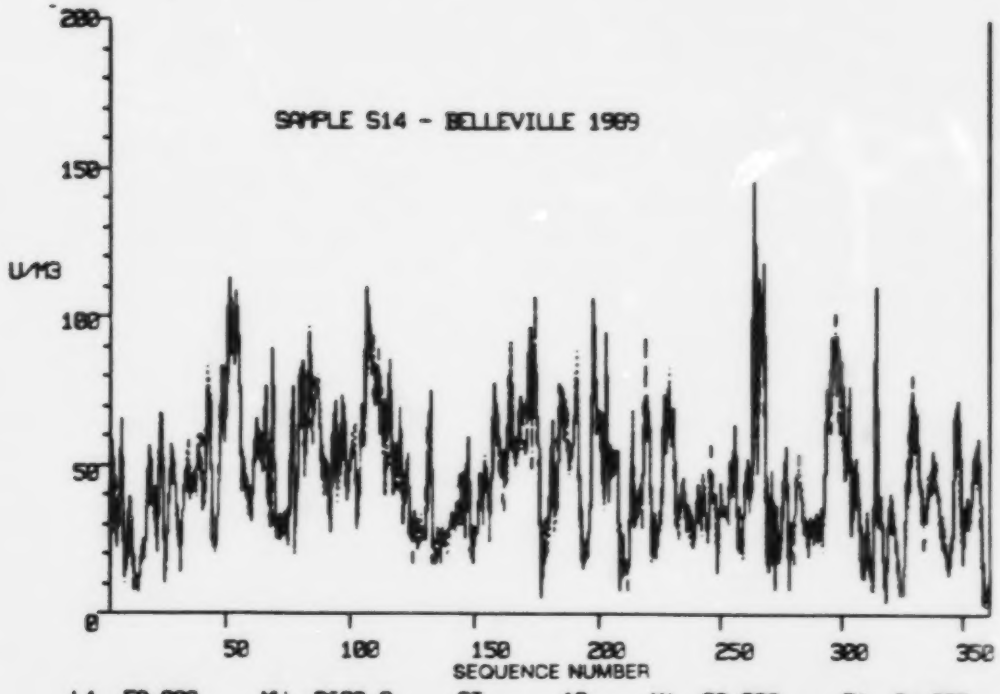
SS= 1 10:36:02
ES= 361 11:06:02

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	39.100	2277.	58.224	1.302	56.924
94/ 55	34.200	1949.	56.984	0.876	56.108
94/ 66	43.500	2528.	58.077	1.057	57.020

BEL2603.DA HALF HOUR OF PHENOL AT SITE E (BENZ. CI)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	45	44	44

AVERAGE = 44
STAND. DEV. = ± 3%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	134.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	39.100	C2	34.200	C3	43.500	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
26-MAY-89		A1	5158.3	DI	1.9900	CG	69.430		
11:06:21		A2	1476.8						

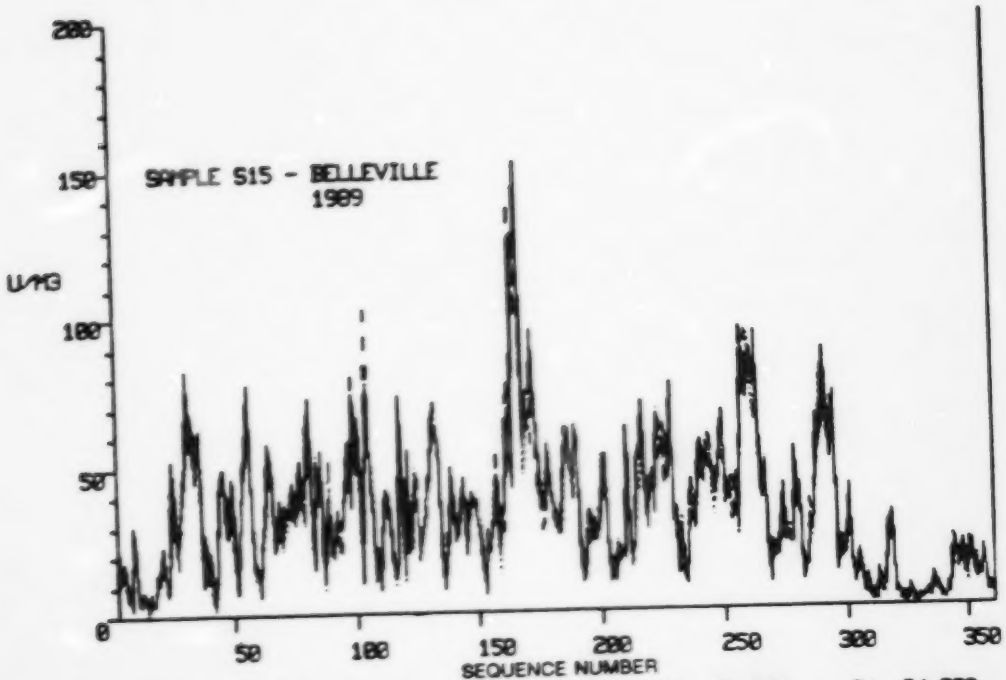
HALF HOUR AVERAGE CONCENTRATIONS
UNITS OF U/M3

SS= 1 11:06:28
ES= 361 11:36:28

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	39.100	1806.	46.18E	1.38?	44.80E
94/ 55	34.200	1520.	44.43E	0.87E	43.56E
94/ 66	43.500	194E.	44.73E	1.05?	43.68!

BEL2604.DA HALF HOUR OF PHENOL AT SITE E (BENZ. CI)

Parent Mass	94.0	94.0	94.0	
Daughter Mass	39.0	55.0	66.0	
TWA : (UG/M3)	32	31	32	AVERAGE = 32 STAND. DEV. = ± 3%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JAT	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	185.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	134.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	39.100	C2	34.200	C3	43.500	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
26-MAY-89		A1	5173.7	DI	1.9300	CG	48.470		
11:36:54		A2	1544						

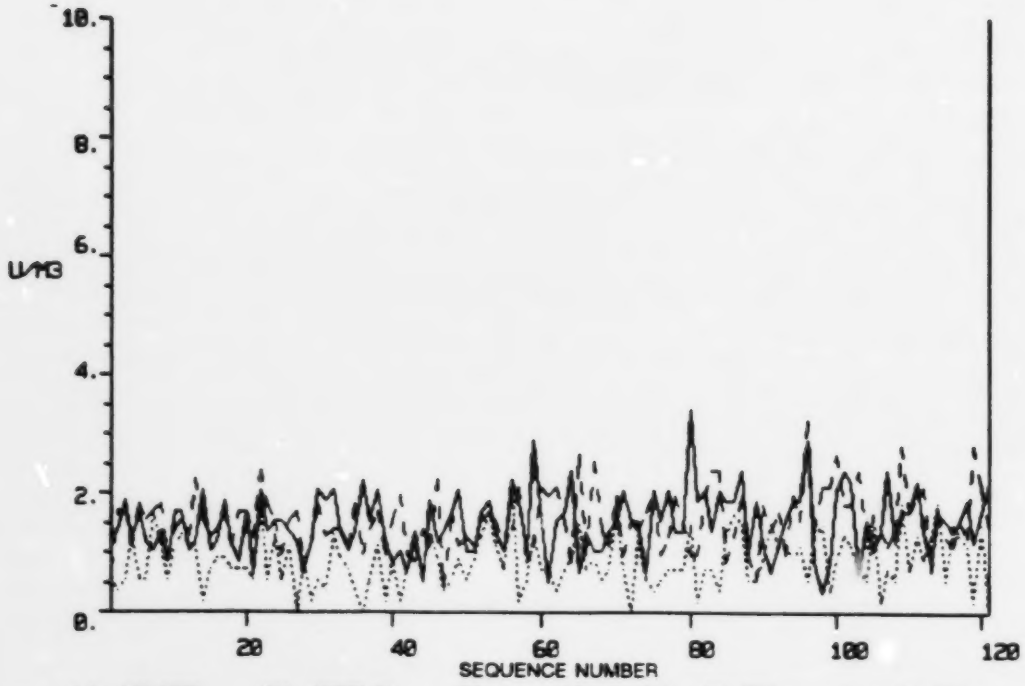
HALF HOUR AVERAGE CONCENTRATIONS
UNITS OF U/M3

SS= 1 11:37:01
ES= 361 12:07:01

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	39.100	1319.	33.734	1.302	32.432
94/ 55	34.200	1095.	32.146	0.876	31.270
94/ 66	43.500	1422.	32.686	1.057	31.629

BEL2901.DA 10 MIN. BKGD. AVE. FOR PHENOL - SITE 1 (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	ANDY	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	135.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	58.200	C2	53.400	C3	70.600	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
29-MAY-89		A1	5025.3	DI	2.0200	CG	91.700		
13:34:51		A2	1494.6						

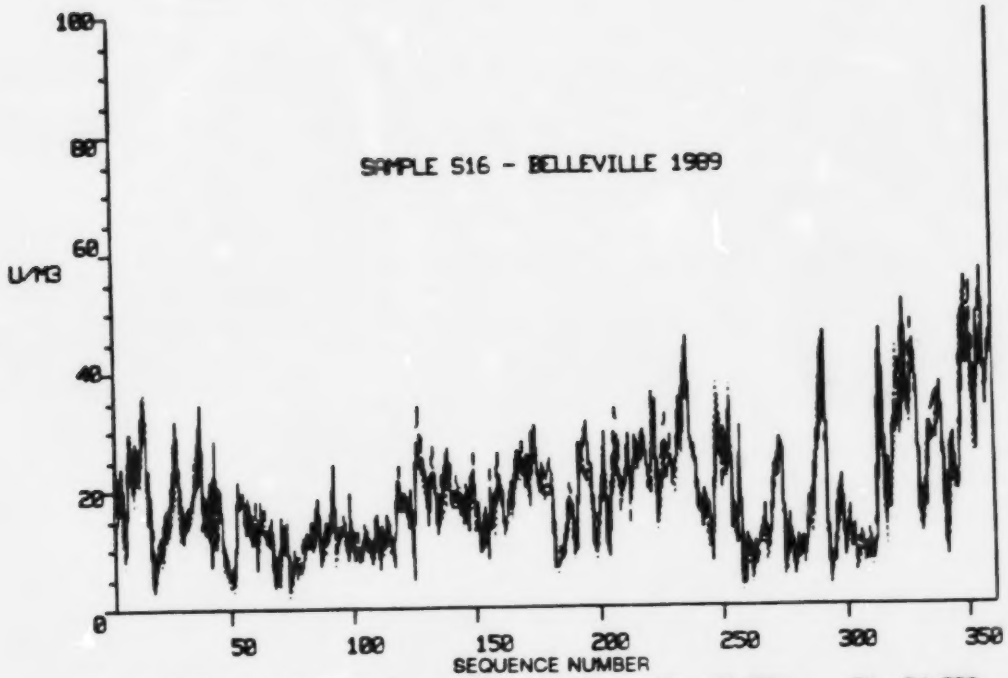
10 MINUTE AVERAGE CONCENTRATIONS

SS= 1 13:34:59 UNITS OF U/MG
ES= 121 13:44:59

PM/DM	CAL.COE.	IONS/SEC	σ	CONC.	σ	DETLIM(3σ)
94/ 39	58.200	88.	31.3	1.515	0.538	1.615
94/ 55	53.400	47.	24.7	0.878	0.463	1.388
94/ 66	70.600	110.	36.5	1.555	0.518	1.553

BE1 2986.DA HALF HOUR OF PHENOL AT SITE F (BENZ. CI)

Parent Mass	94.0	94.0	94.0	
Daughter Mass	39.0	55.0	66.0	
TWA : (UG/M3)	18	18	18	AVERAGE = 18 STAND. DEV. = ± 10%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	0.00000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	35.300	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	ANDY	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	135.	1D	0.14000	R1	32.000	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	58.200	C2	53.400	C3	70.600	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
29-MAY-89		A1	5000.5	DI	2.0100	CG	234.49		
14:42:21		A2	1494						

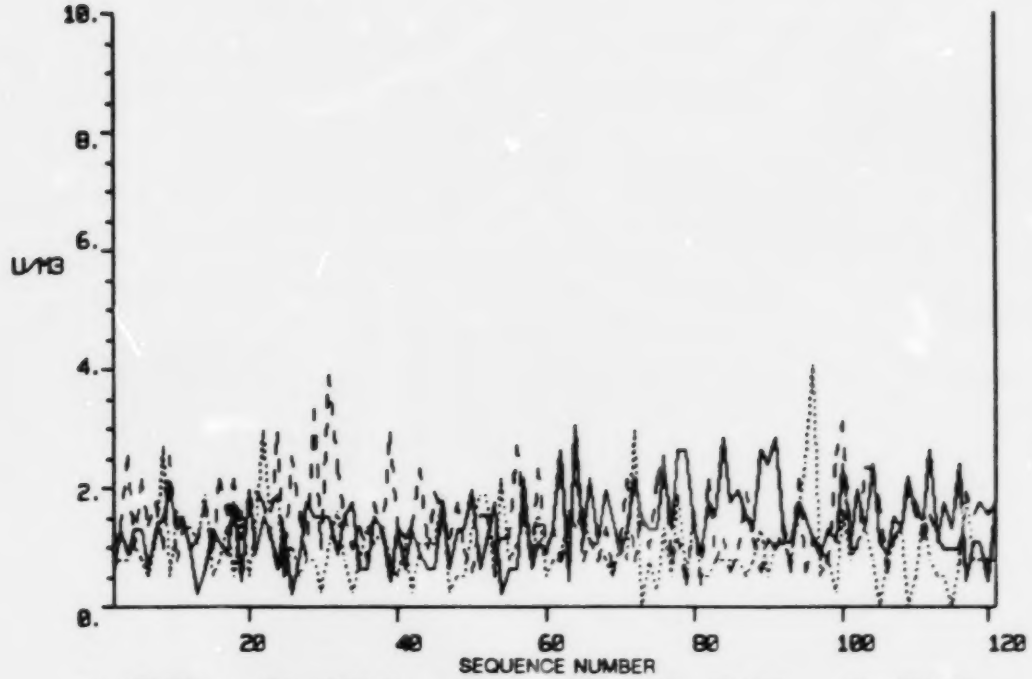
HALF HOUR AVERAGE CONCENTRATIONS
UNITS OF U/M3

SS= 1 14:42:28
ES= 361 15:12:29

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	58.200	1121.	19.253	1.515	17.738
94/ 55	53.400	981.	18.388	0.878	17.502
94/ 66	70.600	1379.	19.533	1.555	17.977

BE3101.DB 10 MIN. BKGD. AVE. FOR PHENOL - SITE J (BENZ. CI)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0



L1 50.000	MU -3600.0	ST 10.	M1 39.000	F1 94.000
L2 34.000	IN 650.00	EN 250.	M2 55.000	F2 94.000
L3 0.00000	FP 50.000	MM 0.00000	M3 66.000	F3 94.000
L4 34.200	GR 0.00000		M4 0.00000	F4 0.00000
L5 0.00000	TH 1.	PE 5.0000	M5 0.00000	F5 0.00000
L6 0.00000	MT 0.	SC MRM	M6 0.00000	F6 0.00000
	OP JAT	CT 1.	M7 0.00000	F7 0.00000
	SY 300.	IS APCI	M8 0.00000	F8 0.00000
RE 105.	DM 0.22000	R3 32.500	Q2 3.5000	M0 0.00000
1R 133.	1D 0.14000	R1 28.000	R2 -14.000	
G1 0.00000	G2 50.000	G3 0.00000		
C1 45.400	C2 36.000	C3 50.900	C4 1.0000	
C5 0.00000	C6 0.00000	C7 0.00000	C8 0.00000	
31-MAY-89	A1 5856.9	DI 1.9800	C6 14.410	
14:24:29	A2 1489.6			

10 MINUTE AVERAGE CONCENTRATIONS

UNITS OF U/M3

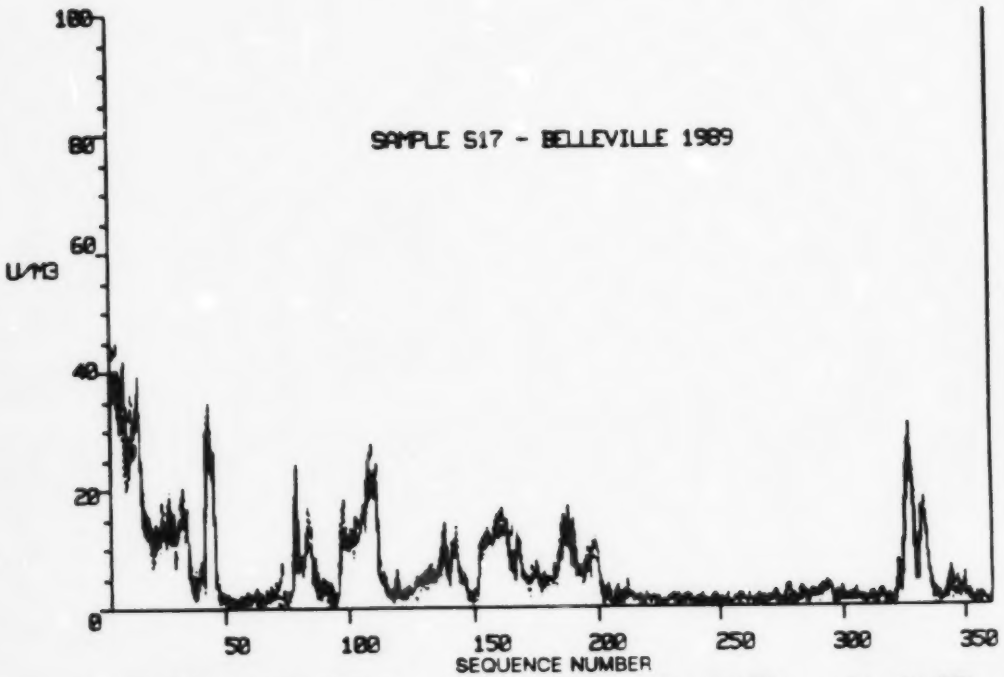
SS= 1 14:24:37
ES= 121 14:34:37

PM/DM	CAL.COE.	IONS/SEC	σ	CONC.	σ	DETLIM(3σ)
94/ 39	45.400	63.	28.5	1.388	0.628	1.884
94/ 55	36.000	39.	23.4	1.051	0.636	1.909
94/ 66	50.900	75.	34.4	1.468	0.676	2.029

BEL3185.DA HALF HOUR OF PHENOL AT SITE E (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	5	4	4

AVERAGE = 4
STAND. DEV. = ± 3%



L1 50.000	MU -3600.0	ST 10.	M1 39.000	F1 94.000
L2 34.000	IN 650.00	EN 250.	M2 55.000	F2 94.000
L3 0.00000	FP 50.000	MM 0.00000	M3 66.000	F3 94.000
L4 34.200	GR 0.00000		M4 0.00000	F4 0.00000
L5 0.00000	TH 1.	PE 5.0000	M5 0.00000	F5 0.00000
L6 0.00000	MT 0.	SC MRM	M6 0.00000	F6 0.00000
	OP JAT	CT 1.	M7 0.00000	F7 0.00000
	SY 300.	IS APCI	M8 0.00000	F8 0.00000
RE 105.	DM 0.22000	R3 32.500	Q2 3.5000	M0 0.00000
1R 133.	1D 0.14000	R1 28.000	R2 -14.000	
G1 0.00000	G2 50.000	G3 0.00000		
C1 45.400	C2 36.000	C3 50.900	C4 1.0000	
C5 0.00000	C6 0.00000	C7 0.00000	C8 0.00000	
31-MAY-89	A1 5127.3	DI 1.9400	CG 166.37	
15:19:47	A2 1514.8			

HALF HOUR AVERAGE CONCENTRATIONS

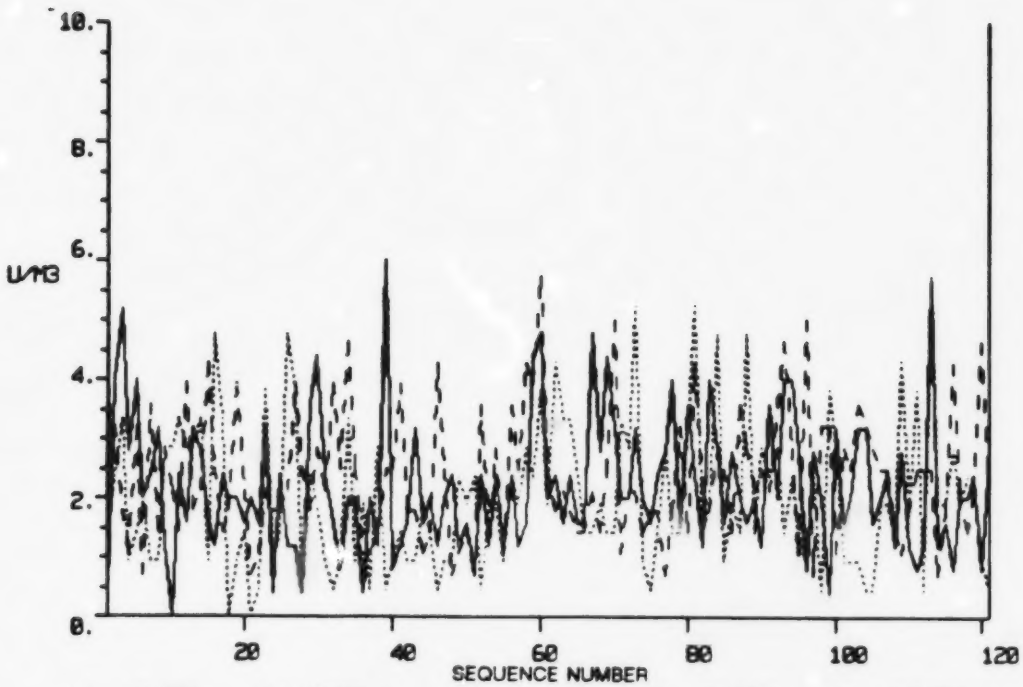
UNITS OF U/M3

SS= 1 15:19:55
ES= 361 15:49:55

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	45.400	293.	6.453	1.380	5.073
94/ 55	36.800	229.	5.214	1.051	4.161
94/ 66	50.900	343.	5.745	1.468	4.277

BEL0201.DA 10 MIN. BKGD. AVE. FOR PHENOL - SITE L (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	-50.000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	32.500	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JEN	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	132.	1D	0.14000	R1	31.500	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	25.000	C2	20.900	C3	27.900	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
2-JUN-89		A1	5318.0	DI	2.1000	CG	174.23		
12:27:09		A2	1587.8						

10 MINUTE AVERAGE CONCENTRATIONS

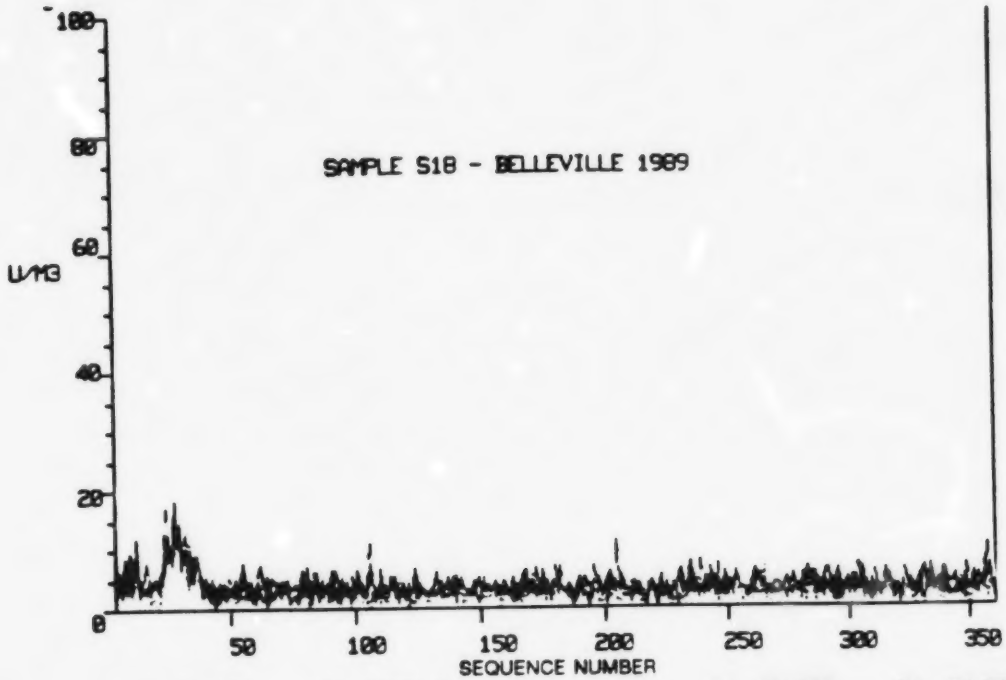
SS= 1 12:27:16 UNITS OF U/M3
ES= 121 12:37:16

PM/DM	CAL.COE.	IONS/SEC	σ	CONC.	σ	DETLIM(3σ)
94/ 39	25.000	55.	28.9	2.212	1.158	3.474
94/ 55	20.900	42.	26.2	2.829	1.255	3.764
94/ 66	27.900	66.	30.9	2.376	1.107	3.320

BEL0202.DA HALF HOUR OF PHENOL AT SITE G (BENZ. CL)

Parent Mass	94.0	94.0	94.0
Daughter Mass	39.0	55.0	66.0
TWA : (UG/M3)	0	0	0

AVERAGE = 0
STAND. DEV. = ± 2%



L1	50.000	MU	-3600.0	ST	10.	M1	39.000	F1	94.000
L2	34.000	IN	650.00	EN	250.	M2	55.000	F2	94.000
L3	-50.000	FP	50.000	MM	0.00000	M3	66.000	F3	94.000
L4	32.500	GR	0.00000			M4	0.00000	F4	0.00000
L5	0.00000	TH	1.	PE	5.0000	M5	0.00000	F5	0.00000
L6	0.00000	MT	0.	SC	MRM	M6	0.00000	F6	0.00000
		OP	JEN	CT	1.	M7	0.00000	F7	0.00000
		SY	300.	IS	APCI	M8	0.00000	F8	0.00000
RE	105.	DM	0.22000	R3	32.000	Q2	3.5000	M0	0.00000
1R	132.	1D	0.14000	R1	31.500	R2	-14.000		
G1	0.00000	G2	50.000	G3	0.00000				
C1	25.000	C2	20.900	C3	27.900	C4	1.0000		
C5	0.00000	C6	0.00000	C7	0.00000	C8	0.00000		
2-JUN-89		A1	5340.4	DI	2.0200	CG	1.3100		
12:57:32		A2	1604.3						

HALF HOUR AVERAGE CONCENTRATIONS

UNITS OF UG/M3

SS= 1 12:57:40
ES= 361 13:27:40

PM/DM	CAL.COE.	IONS/SEC	TWA CONC.	BKGD. CONC.	NET TWA CONC.
94/ 39	25.000	95.	3.811	2.212	1.599 *
94/ 55	20.900	65.	3.054	2.029	1.065 *
94/ 66	27.900	112.	4.531	2.376	2.235 *

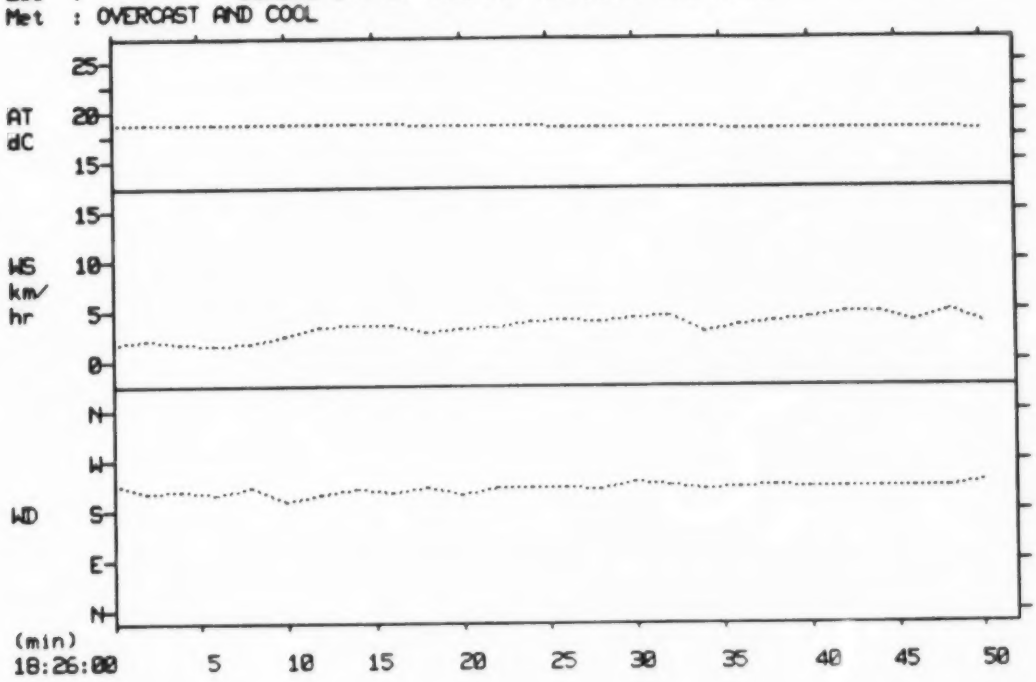
* - BELOW DET. LIM.

6.3 Appendix C: Meteorological Data, Mobile TAGA 6000 Station

Meteorological data was sampled every second and recorded at 30 second intervals; where AT = ambient temperature, WS = wind speed and WD = wind direction. The meteorological data was averaged and reported every 2 minutes. This information was used to generate the attached plots. The meteorological data acquired during each monitoring period, was used to confirm the extent to which the TAGA 6000 was positioned downwind of BTL.

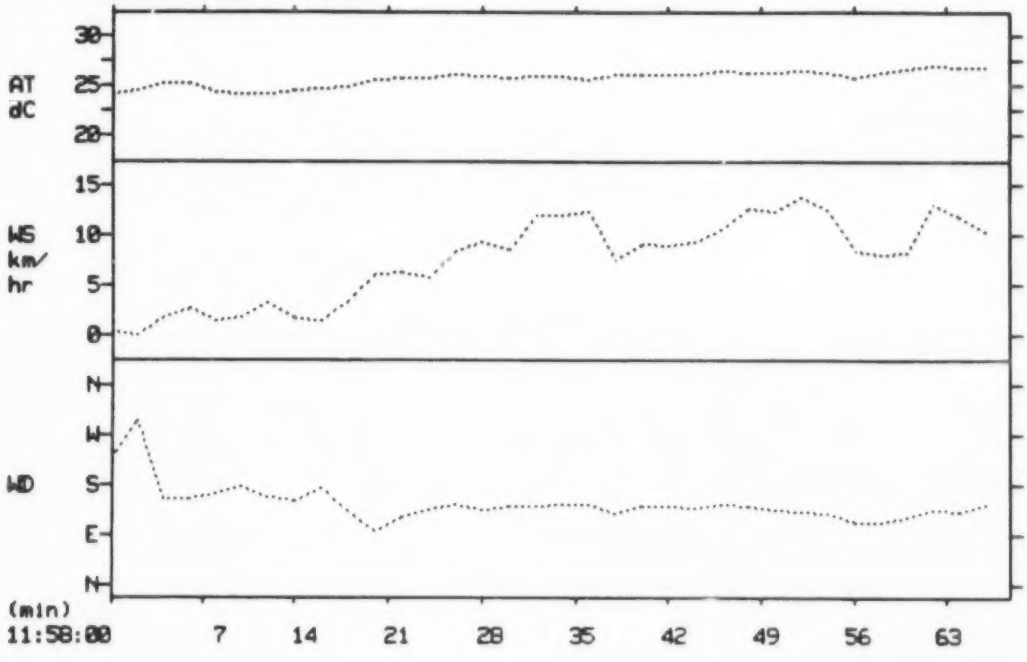
BELLEVILLE : SITE A

Start: 89/05/23 18:24:30 File: BE2302.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : DUNDAS ST. E. DIRECTLY OPPOSITE BTL PLANT
Met : OVERCAST AND COOL



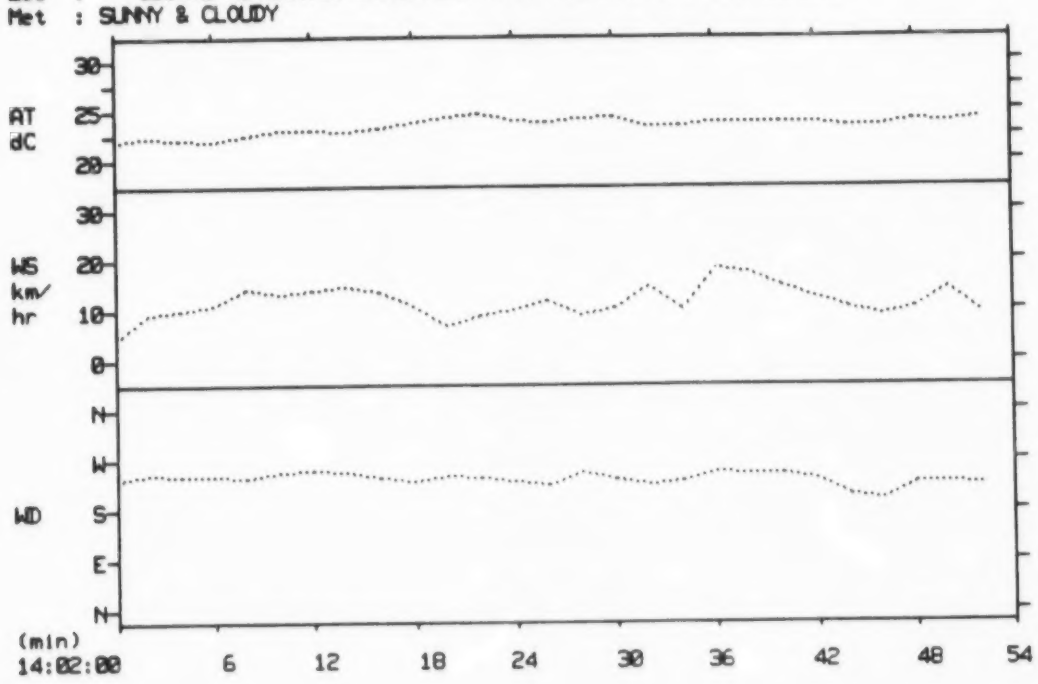
BELLEVILLE : SITE A

Start: 89/05/24 11:55:30 File: BE2402.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : OPP. BTL,NORTHSIDE OF DUNDAS
Met : SUNNY & PARTLY CLOUDY



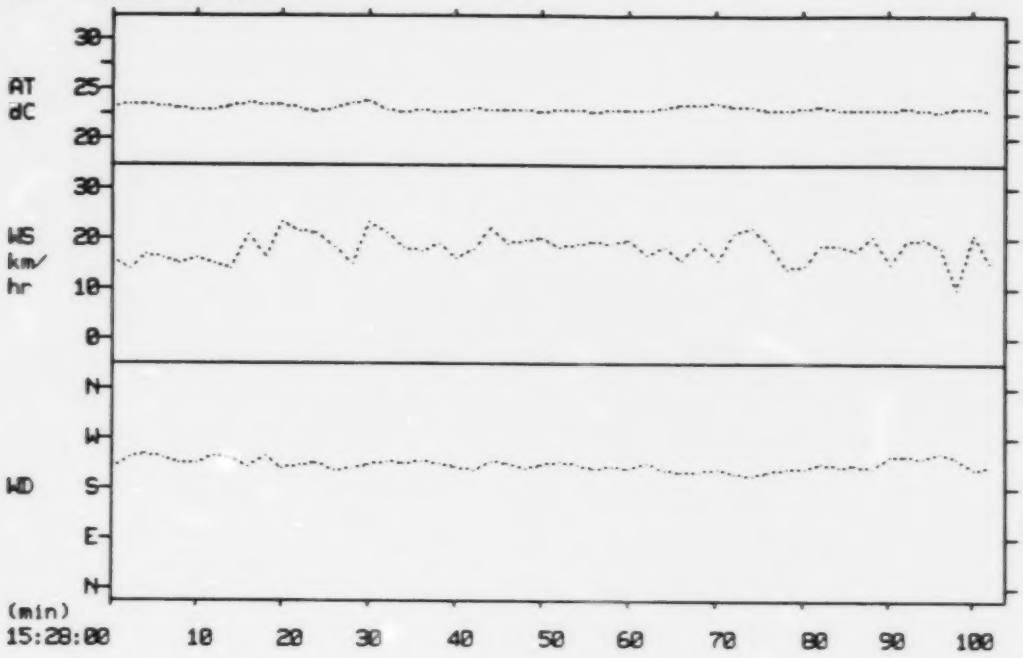
BELLEVILLE : SITE B

Start: 89/05/24 13:59:30 File: BE2404.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : QUINTE AUTOMATIC SPRINKLER LTD. PARKING LOT OFF DUNDAS
Met : SUNNY & CLOUDY



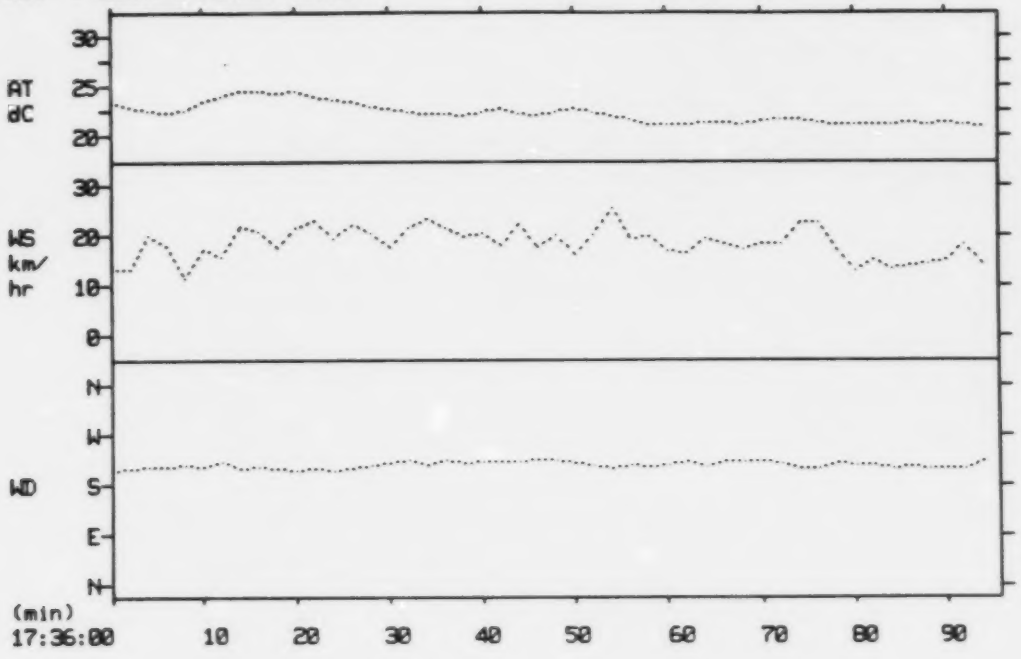
BELLEVILLE : SITE C

Start: 89/05/24 15:25:30 File: BE2405.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : NE. CORNER OF HAIG ST. AND DUNDAS ST E.
Met : SUNNY AND WARM



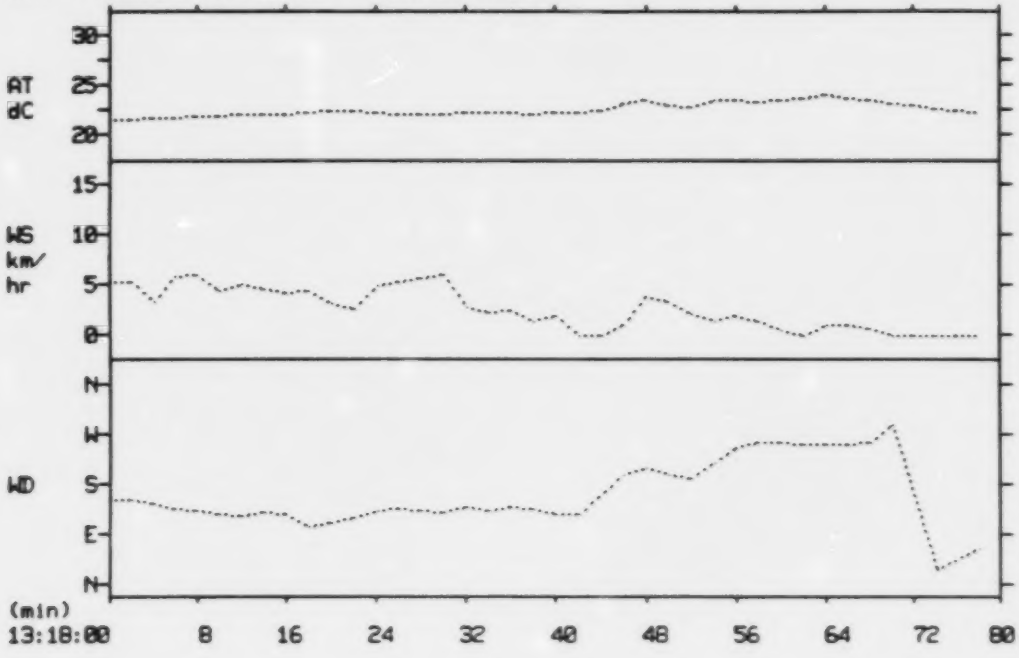
BELLEVILLE : SITE D

Start: 89/05/24 17:33:00 File: BE2406.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : WEST PARKING LOT OF QUINTE, EAST OF BTL
Met : SUNNY & PARTLY CLOUDY



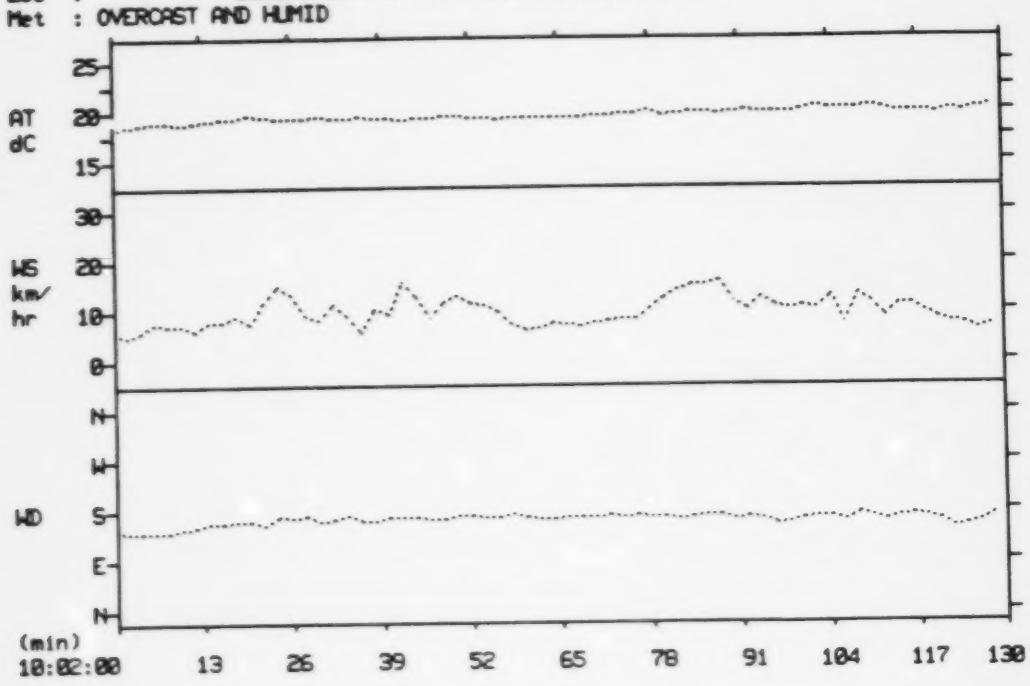
BELLEVILLE : SITE E

Start: 89/05/25 13:16:30 File: BE2502.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : DUNDAS ST. E. (S. SIDE), IN FRONT OF BTL PLANT
Met : OVERCAST AND HUMID - CHANCE OF RAIN



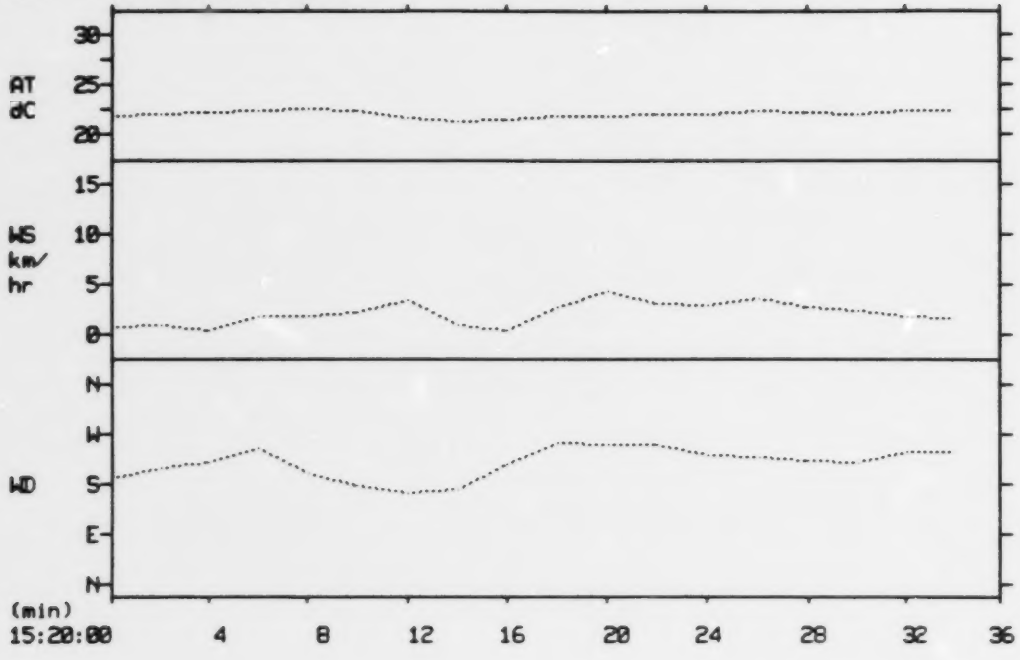
BELLEVILLE : SITE E

Start: 89/05/26 10:00:30 File: BE2601.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : DUNDAS ST. E. DIRECTLY IN FRONT OF BTL
Met : OVERCAST AND HUMID



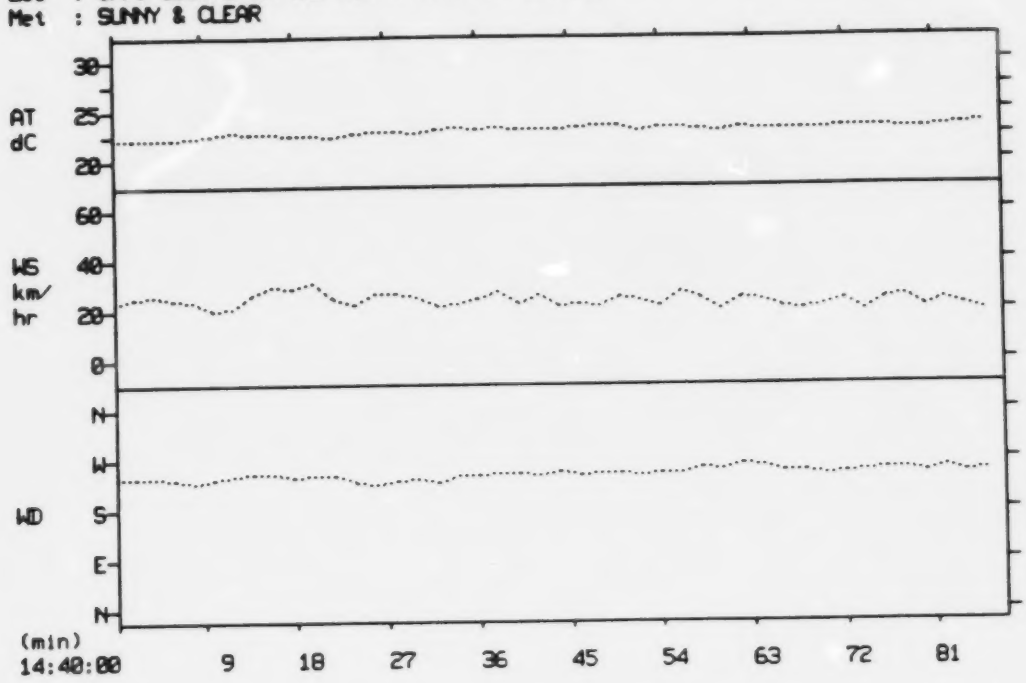
BELLEVILLE : SITE E

Start: 89/05/31 15:18:30 File: BE3102.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc :
Met : OVERCASTT AND HUMID



BELLEVILLE : SITE F

Start: 89/05/29 14:30:00 File: BE2902.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : OPP. QUINTE ON THE NORTH SIDE OF DUNDAS
Met : SUNNY & CLEAR



BELLEVILLE : SITE G

Start: 89/06/02 12:54:30 File: BE0203.MET
Scan : 30 sec Ave: 2.00 min Rep: 2.00 min Rnd: 2.0 min
Loc : SOUTH SIDE OF DUNDAS OPPOSITE QUINTE AUTO. SPRINKLER
Met : SUNNY